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ABSTRACT

A committee was appointed to review undergraduate and postgraduate medical education in Great Britain, and in light of national needs and resources, including technical assistance overseas, to advise her Majesty's Government on what principles future development (including its planning and coordination) should be based. In particular, the committee was to consider what changes may be needed in the pattern, number, nature or location of the institutions providing medical education or in its general content. This report reviews the future pattern of medical care in Britain, postgraduate medical education and training, the undergraduate medical course, student selection and preparation for the medical course, the number of medical school places required, the cost of medical education, medical education in London, the organization and administration of medical schools and teaching hospitals, and the possibilities of overseas technical assistance. (Author/HS)

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Royal Commission
on
Medical Education

1965-68

REPORT

HE 002 716

Presented to Parliament by Command of Her Majesty
April 1968

LONDON
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The estimated total expenditure of the Royal Commission is about £79,052. Of this, about £11,000 represents the cost of special surveys and £7,052 the cost of printing and publishing this Report.

THE ROYAL WARRANTS

ELIZABETH R.

Elizabeth The Second, by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Our other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith to

Our Right Trusty and Well-beloved Alexander Robertus, Baron Todd ;

Our Trusty and Well-beloved Sir Robert Platt, Baronet ;

Sir Edward Foyle Collingwood, Knight, Commander of Our Most Excellent Order of the British Empire;

Sir Brian Wellingham Windeyer, Knight ;

Peter Brian Medawar, Esquire, Commander of Our Most Excellent Order of the British Empire, upon whom We have signified Our intention of conferring the honour of knighthood, now called Sir Peter Brian Medawar ;

Andrew Gilchrist Ross Lowdon, Esquire, Officer of Our Most Excellent Order of the British Empire ;

John Rogers Ellis, Esquire, Member of Our Most Excellent Order of the British Empire ;

Alice Josephine Mary Taylor Barnes (Mrs. Brian Warren) ;

George Morrison Carstairs, Esquire;

Geoffrey Ferris Dixon, Esquire ;

Andrew Watt Kay, Esquire ;

John Niall Meredydd Parry, Esquire ;

John Rupert Squire, Esquire ;

Richard Morris Titmuss, Esquire ;

Edward Maitland Wright, Esquire ;

Frank George Young, Esquire ;

Greeting!

Whereas We have deemed it expedient that a Commission should forthwith issue, to review medical education, undergraduate and post-graduate, in Great Britain, and in the light of national needs and resources, including technical assistance overseas, to advise Her Majesty's Government on what principles future development (including its planning and co-ordination) should be based ; in particular, in the light of those principles and having regard to the statutory functions of the General Medical Council and the current review by that Council of recent changes in the undergraduate curriculum, to consider what changes may be needed in the pattern, number, nature or location of the institutions providing medical education or in its general content ; and to report :

Now Know Ye that We, reposing great trust and confidence in your knowledge and ability, have authorised and appointed, and do by these Presents authorise and appoint you the said Alexander Robertus Baron Todd (Chairman) ; Sir Robert Platt ; Sir Edward Foyle Collingwood ; Sir Brian Wellingham Windeyer ; the said Peter Brian Medawar ; Andrew Gilchrist Ross Lowdon ; John Rogers Ellis ; Alice Josephine Mary Taylor Barnes ; George Morrison Carstairs ; Geoffrey Ferris Dixon ; Andrew Watt Kay ; John Niall Meredydd Parry ; John Rupert Squire ; Richard Morris Titmuss ; Edward Maitland Wright ; Frank George Young to be Our Commissioners for the purpose of the said inquiry :

And for the better effecting the purposes of this Our Commission, We do by these Presents give and grant unto you, or any five or more of you, full power to call before you such persons as you shall judge likely to afford you any information upon the subject of this Our Commission ; to call for information in writing ; and also to call for, have access to and examine all such books, documents, registers and records as may afford you the fullest information on the subject and to inquire of and concerning the premises by all other lawful ways and means whatsoever :

And We do by these Presents authorise and empower you, or any of you, to visit and personally inspect such places as you may deem it expedient so to inspect for the more effectual carrying out of the purposes aforesaid :

And We do by these Presents will and ordain that this Our Commission shall continue in full force and virtue, and that you, Our said Commissioners, or any five or more of you may from time to time proceed in the execution thereof, and of every matter and thing therein contained, although the same be not continued from time to time by adjournment :

And We do further ordain that you, or any five or more of you, have liberty to report your proceedings under this Our Commission from time to time if you shall judge it expedient so to do :

And Our further will and pleasure is that you do, with as little delay as possible, report to Us your opinion upon the matters herein submitted for your consideration.

Given at Our Court at Saint James's the sixth day of August in the fourteenth Year of Our Reign.

By Her Majesty's Command.

Frank Soskice.

ELIZABETH R.

Elizabeth The Second, by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Our other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith, to Our Trusty and Well-beloved John Norman Romney Barber, Esquire, and Elizabeth Leila Millicent Chilver (Mrs. Richard Clementson Chilver),

Greeting!

Whereas by Warrant under the Royal Sign Manual bearing date the sixth day of August, 1965, We appointed a Commission, to be called the Royal Commission on Medical Education:

Now Know Ye that We, reposing great trust and confidence in your knowledge and ability do by these Presents appoint you the said John Norman Romney Barber and Elizabeth Leila Millicent Chilver to be Members of the Royal Commission on Medical Education.

Given at Our Court at Saint James's the eighteenth day of September, 1965 ; In the Fourteenth Year of Our Reign.

By Her Majesty's Command.

Frank Soskice.

ELIZABETH R.

Elizabeth The Second, by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Our other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith, to Our Trusty and Well-beloved Charles Mann Fleming, Esquire, Commander of Our Most Excellent Order of the British Empire,

Greeting!

Whereas by Warrant under the Royal Sign Manual bearing date the sixth day of August, 1965, We appointed a Commission, to be called the Royal Commission on Medical Education :

Now Know Ye that We, reposing great trust and confidence in your knowledge and ability do by these Presents appoint you the said Charles Mann Fleming to be a Member of the said Commission, in the room of Our Trusty and Well-beloved Andrew Gilchrist Ross Lowdon, Esquire, Officer of Our Most Excellent Order of the British Empire, deceased.

Given at Our Court at Saint James's the fourteenth day of December, 1965 ; In the Fourteenth Year of Our Reign.

By Her Majesty's Command.

Frank Soskice.

ELIZABETH R.

ELIZABETH THE SECOND, by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Our other Realms and Territories QUEEN, Head of the Commonwealth, Defender of the Faith, to Our Trusty and Well-beloved Graham Malcolm Wilson, Esquire,

Greeting!

WHEREAS by Warrant under the Royal Sign Manual bearing date the sixth day of August, 1965, We appointed a Commission, to be called the Royal Commission on Medical Education :

NOW KNOW YE that We, reposing great trust and confidence in your knowledge and ability do by these Presents appoint you the said Graham Malcolm Wilson, to be a Member of the said Commission, in the room of Our Trusty and Well-beloved John Rupert Squire, Esquire, deceased.

Given at Our Court at Saint James's the fifth day of April, 1966. In the Fifteenth Year of our Reign.

By Her Majesty's Command.

ROY JENKINS

MEMBERS OF THE COMMISSION

THE RT. HON. THE LORD TODD, D.SC., F.R.S. (*Chairman*)
THE RT. HON. THE LORD PLATT, M.D., F.R.C.P.
SIR EDWARD COLLINGWOOD, C.B.E., SC.D., F.R.S.
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Secretary

MR. M. W. HODGES

Assistant Secretary

MR. W. G. HAMMERTON

*Died, September 1965
†Died, January 1966
‡Resigned because of ill-health, August 1967

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ROYAL COMMISSION ON MEDICAL EDUCATION

REPORT

To The Queen's Most Excellent Majesty.

MAY IT PLEASE YOUR MAJESTY

We, the undersigned Commissioners, having been appointed to review medical education, undergraduate and postgraduate, in Great Britain, and in the light of national needs and resources, including technical assistance overseas, to advise Her Majesty's Government on what principles future development (including its planning and co-ordination) should be based; in particular, in the light of those principles and having regard to the statutory functions of the General Medical Council and the current review by that Council of recent changes in the undergraduate curriculum, to consider what changes may be needed in the pattern, number, nature or location of the institutions providing medical education or in its general content; and to report:

HUMBLY SUBMIT TO YOUR MAJESTY THE FOLLOWING REPORT.

CHAPTER 1

INTRODUCTION

PROCEDURE

1. Our appointment was announced in Parliament by the Prime Minister on 29th June, 1965. We record with great regret the deaths of two members, Professor A. G. R. Lowdon in September 1965 and Professor J. R. Squire in January 1966, and the resignation in August 1967 of another member, Dr. E. M. Wright, on account of ill-health.

2. We met for the first time in September 1965 and since have held over a hundred meetings. We have received written evidence from over 400 organisations or individuals and taken oral evidence, largely in informal discussion, from about 100; they are listed in Appendix 1. In general there has been little difficulty in obtaining the views of those concerned with medical education in Great Britain. Our main task has been to evaluate opinions bearing on matters that have been widely debated. Medical teachers and others who are concerned with medical education are far from inarticulate and have no lack of access to means of making known the facts and their views thereon, and there is enough diversity of views and interests among them to ensure that no important matter is likely to have been left undisturbed for reasons of general expediency. Indeed, on many topics the evidence we have received has consisted very largely of information already publicly available. Our conclusions rest, in almost all respects, on a broad basis of evidence; seldom

has a particular item of evidence played a crucial part in forming our views, We have arranged for complete sets of the memoranda submitted to us, together with summary records of the oral evidence we have taken, to be deposited in the Public Record Office in London, the Scottish Record Office in Edinburgh, the National Library of Wales in Aberystwyth, the Library of the Royal Society of Medicine and the offices of the Association for the Study of Medical Education, on the understanding that these documents will be freely accessible to any enquirer.

3. Representative groups of members have visited many British medical schools, including the embryonic school at Nottingham, and a number of places where the establishment of new medical schools has been proposed. During these visits members had extensive discussions with students, teachers, university officers and representatives of hospital authorities and local groups concerned with medical education. Because of the informality of these discussions and the impossibility of giving all the participants an opportunity to check the remarks attributed to them, we shall not publish a record of the visits.

4. Groups of members have made visits, specifically for the purpose of the Commission, to Czechoslovakia, Israel, Malta, Sweden, Turkey, the United States of America and the Union of Soviet Socialist Republics. In addition, members have been able, in the course of visits undertaken primarily for other purposes, to enquire into matters of interest to the Commission in many other countries. We have taken advantage of visits to Great Britain by persons eminent in medicine or in medical education abroad to ask them about relevant developments in their own countries; we wish to acknowledge particularly the helpfulness of M. Robert Debré, who came to London at our invitation to discuss with us the recent changes in medical education in France, in which he has taken a leading part.

5. On some important matters the information available to us was far from adequate, but we could not ourselves organise research into medical education on a big scale. We have been conscious throughout of the urgency of our task and there would have been no possibility of planning and carrying out any major research project, and having the results available for full consideration, within the time we thought our work should take. We have had to accept, for our purposes, the virtual absence of systematic factual information about the practical processes of medical teaching in Britain and their effectiveness; we have recommended that provision be made for proper study of the aims and methods of medical teachers, as part of a substantial research effort in medical education in coming years. We were able in various ways to expedite the completion of research already in progress. We also arranged for support to be provided from public funds for several short surveys, covering all medical schools in Great Britain, of topics of special importance on which evidence might not otherwise have been adequate. The Association for the Study of Medical Education and the National Foundation for Educational Research in England and Wales jointly carried out a survey of relevant characteristics and opinions of medical students in the first and final years of their undergraduate course in 1966. Appendix 19 contains a summary report by the two bodies concerned. We understand that they hope to publish a fuller report later. One of our members, Professor

G. M. Carstairs, with the help of Dr. H. J. Walton, Dr. J. R. Smythies and Dr. A. H. Crisp, made a survey of undergraduate teaching in psychiatry.* A survey of the organisation and administration of medical schools, undertaken by Mr. George Clark, Secretary of the Middlesex Hospital Medical School and formerly Registrar of the University of Sheffield, provided a great deal of valuable factual information on many of the problems discussed in Chapter 10. We are indebted to the Ministry of Health and to the Nuffield Provincial Hospitals Trust for the special consideration they have given to applications for the support of research on other matters of special interest to us, and to the many organisations and individuals who made available to us research findings in advance of publication, or at our invitation contributed memoranda on subjects on which they speak with particular authority.

HISTORICAL BACKGROUND

6. We do not propose to discuss at length the history and background of medical education in this country. As we have implied above, there is no lack of published material available. We refer to the past only in so far as it is directly relevant and necessary for an understanding of present problems and our proposed solutions to them.

7. Like all branches of learning to which science and technology contribute, medicine has undergone tremendous development during the past century and the pace of its advance shows at present no sign of slackening. Since educational patterns, like the social attitudes on which they ultimately rest, are generally slow to change in a settled community such as ours, educational practice in all fields and at all levels has become a matter of widespread public debate. Medical education is a matter of particular public concern, for a variety of reasons. The university education of a doctor, like that of any other professional person, must incorporate an element of practical instruction; but this raises more complex problems in medicine than in other fields, because adequate practical instruction in medicine can be given only in association with—and often only as a part of—the provision of medical care through the health services of the nation. For this reason the education of a doctor, originally like that for other professions little more than a form of apprenticeship in which the aspiring student " walked the wards " with leading practitioners in his field, has perhaps necessarily retained more of this character than has education for other professions. In Scotland medical schools grew up within the universities and their associated hospitals. In England and Wales, however, a much stronger influence on medical education was exercised until comparatively recently by the professional organisations, e.g. the Society of Apothecaries and the Royal Colleges of Physicians and Surgeons; even in the past hundred years, when the main responsibility for the maintenance of educational standards has been carried by the General Medical Council, the influence exerted by universities on the pattern of medical education has been mainly felt at the undergraduate level: postgraduate training, in which the need for a measure of apprenticeship is strongest, has remained to a considerable extent in the hands of professional bodies.

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* CARSTAIRS, G. M. et al. Survey of Undergraduate Psychiatry Teaching in the United Kingdom, 1966–67. *British Journal of Psychiatry* (awaiting publication).

8. Until the rise of scientific medicine the apprenticeship system was, on the whole, an adequate basis for medical education. Medical knowledge was limited in extent and general in nature; after a few years of apprenticeship a young man could reasonably set himself up as an independent practitioner capable of treating, within the limits of current medical knowledge, most patients who might come his way. The Medical Act of 1858, which first established statutory requirements for medical registration and hence for the education and training that should lead to registration, was drafted on the assumption that at the end of a few years' training the emergent doctor could be sufficiently experienced in medicine, surgery and midwifery to set himself up in independent practice. This assumption may well have been valid in the mid-nineteenth century, but advances in medical knowledge as well as the growth of specialisation were soon to make it quite unrealistic. Yet it remained to dominate medical education for nearly a hundred years and its influence is felt in the survival of many requirements and practices which could only be justified if an essential object of the undergraduate medical course were still to produce a safe and competent general practitioner. We welcome the intention of the General Medical Council* to seek changes in the present law so as to remove the vestiges of this concept, which in the course of time tended to consolidate the division, already apparent in the mid-nineteenth century, between the consultant physicians and surgeons practising in the major voluntary hospitals and the general practitioner, without access to beds in these hospitals and professionally considered to be of an inferior status.

9. The first comprehensive review of medical education in Britain was that of the Goodenough Committee in 1942–1944. By that time dissatisfaction with many features of medical education was apparent, and this dissatisfaction became widespread after the Second World War. The changes initiated by the recommendations of the Goodenough Committee† have been smaller and slower than they might have been, however, partly because of the incidental effects of the National Health Service Acts. Social and medical progress during the twentieth century have combined to make the care of the sick and infirm a national responsibility and the institution of the National Health Service must rank as one of the greatest social advances in our history. For a variety of reasons, however, its institution was bound to involve acceptance, at least for a time, of the main existing features of medical services and education, not all of which were desirable. The achievement of some of the hopes reflected in the National Health Service Acts has been frustrated by recurrent economic crises and consequent financial stringency, which has regrettably slowed down the physical regeneration of British hospitals and medical schools. Further difficulties have arisen because Britain's output of doctors is increasingly falling short of that necessary fully to maintain the National Health Service.

OUTLINE OF CONCLUSIONS AND RECOMMENDATIONS

10. Recommendations such as ours will be of little value unless they provide a basis for the adequate satisfaction of the country's need, not just in the

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* Recommendations as to Basic Medical Education, p. 10. General Medical Council 1967.

† Report of the Interdepartmental Committee on Medical Schools. H.M.S.O., 1944.

immediate future, but two generations hence. Accordingly we have endeavoured on the basis of past and present trends to present in the next chapter of our Report a picture of the likely pattern of medical care in the future and to use this as a basis for our forecast of manpower needs and of the general pattern of medical education appropriate to the future.

11. In our picture of the future pattern of medical services in Britain, all doctors—general practitioners as well as Consultants—will be specialists in particular aspects of medicine who will be equally regarded as such and will be fully trained for the work they undertake. This view implies a number of changes in career structure and especially in postgraduate training, which seems to us hitherto to have been haphazard and in many respects unsatisfactory. The absence of adequate arrangements for postgraduate professional training has probably had an important influence in the retention of the obsolete concept of undergraduate medical education to which we referred in paragraph 7 above. In our third chapter we make proposals for postgraduate training beyond the pre-registration year, which we think should be retained broadly in its present form. Our proposals involve joint action by the universities, the professional colleges and the Health Departments and should lead to the provision of an agreed pattern of professional training for all specialties (including general practice), linked to a new hospital career structure which may help to eliminate many present frustrations. As a corollary to this reform we envisage the introduction of vocational registration.

12. In Chapter 4, on undergraduate education, we start from the premise that every doctor who wishes to exercise a substantial measure of independent clinical judgment will be required to have a substantial postgraduate professional training, and that the aim of the undergraduate course should be to produce not a finished doctor but a broadly educated man who can become a doctor by further training. We are convinced that undergraduate medical education should be firmly in the hands of a university and that a university degree course should be a requirement for the entry of British students to the medical profession. We propose that the present " 1st M.B. " examination be abolished and that the undergraduate medical course should be of five years' duration, preferably offering a degree in medical science as well as a medical degree and including at least two years of fundamental clinical education. In outlining the general nature of the course we propose, we have sought to provide the greatest possible flexibility, with opportunity for experiment by the universities themselves, believing that uniformity in detail is undesirable and that each university should be free to develop its own ideas with as little restriction as possible. In this we are in full accord with the Recommendations on the undergraduate curriculum issued in 1967 by the General Medical Council, following the Council's review of recent changes in the undergraduate curriculum.* We also make, in Chapter 5, certain recommendations aimed at making entry requirements less rigid than they are now.

13. Having in earlier chapters discussed the methods by which we believe the training of our future doctors should be conducted, we turn in Chapter 6 to the urgent question of national needs. Manpower requirements are

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* Recommendations as to Basic Medical Education. General Medical Council, 1967.

difficult to estimate because they can be influenced by unforeseeable advances in medicine, by changes in the pattern of medical services and by the rising demands which accompany increasing affluence in any society, as well as by our own proposals for changes in medical education and training. We saw at an early stage that the shortage of doctors already apparent would increase rapidly; we thought the need for early action was so great that we presented an interim memorandum to the Ministers concerned, pointing out that unless the present output could be quickly increased, Britain was likely by 1975 to be some 11,000 short of the number of practising doctors necessary to maintain the National Health Service at a satisfactory level on its present basis. Looking further ahead, we have found that to meet adequately the needs of the country, even on a conservative estimate, the capacity of Britain's medical schools would have to rise more steeply than would, in fact, be possible over the coming years. We recommend that their annual intake be doubled by 1990. We believe that this target is realistic, although great efforts will be required if it is to be achieved: we set out in Chapter 7 a plan for reaching it by the expansion of existing medical schools and the creation of some new schools. In Chapter 8 we attempt to estimate very roughly the level of expenditure which will be required to implement our recommendations for the expansion of undergraduate medical education.

14. London has long occupied a leading position in medical education and practice and its medical schools are known throughout the world. Medical education in London developed, however, as an adjunct of the great voluntary hospitals and, at the postgraduate level, of the numerous special hospitals which sprang up in the London area during and since the latter part of the nineteenth century. The growth of the twelve London undergraduate medical schools has been rather haphazard; the schools vary widely in size and are semi-autonomous bodies whose relation to the central university authorities is less close than that of medical schools elsewhere. In our view the maintenance of twelve medical schools, each with its independent teaching hospital group and without direct contact with a single multi-faculty college of the University of London, is not compatible with a continuation of the highest standards of medical education in London in the long-term future. The central University authorities, and the staff of the medical schools and their associated hospitals, have by great skill and determination been able to make the present arrangements work effectively for many years: they deserve a more appropriate and modern setting.

15. We therefore propose in Chapter 9 a series of mergers which will reduce the number of London medical schools to six, each of which we hope will become an integral part of a multi-faculty university institution, as that institution's faculty of medicine. We also propose that the special postgraduate teaching hospitals in London be brought as soon as possible into physical proximity with general teaching hospitals and that their associated postgraduate institutes be integrated with the appropriate undergraduate medical schools. The special hospitals grew up originally as separate entities because of a variety of past circumstances and their continuation as such, involving as it does the separation of postgraduate training and research from the main stream of medical education and medical care, is in our view educationally indefensible as well as uneconomic. Our proposals represent a logical and

practicable reorganisation which will enable London to maintain in the future the great reputation it has earned in the past as a centre of medical education, and to play its full part in the development of medicine in this country.

16. A change in the hospital organisation in the Metropolitan areas is an important part of our proposals for the future development of medical education in London. We have given much thought also to the relationship which should exist between the universities and the National Health Service throughout Great Britain in respect of staff, equipment and facilities for teaching and research, as well as the division of financial responsibility. At the present time two different systems for the administration of teaching hospitals are in use. In England and Wales the teaching hospitals stand outside the regional board organisation, while in Scotland they are within it. Neither system as now operated is, in our view, satisfactory from the point of view of medical education; in Chapter 10 we make proposals for a single unified system in which adequate representation of the various interests involved should ensure smooth development of the combined educational and service functions of British hospitals. Under such a reorganisation, changes may be necessary in the number and size of some of the present hospital regions.

17. In our terms of reference we were asked to consider Britain's needs in the matter of medical education as a facet of technical assistance to developing countries. The scale on which aid can be provided is naturally limited in financial terms, but we believe a significant contribution can be made both by offering training in this country to postgraduate and undergraduate students from overseas and also by the provision of assistance within the developing countries by seconding medical teachers and doctors for a time to these countries to help in the organisation of medical schools and the development of medical services. In Chapter 11 we make recommendations on these matters and, in particular, we call for an extension of the system of linkage between medical schools in this country and schools in developing countries, a system which has already proved its worth. We believe that these recommendations will help Britain to deploy its technical assistance in ways which will best provide effective help to the developing countries in overcoming the enormous problems they face in the fields of medical education and medical care.

18. We were asked to review the whole field of medical education and to make proposals " in the light of national needs and resources "; this we have constantly borne in mind. National needs could, of course, be variously estimated. Advances in medicine are themselves likely to generate greater demands on medical services by making possible the relief or cure of hitherto intractable conditions and by extending life expectancy. They are also likely to engender demands for the treatment of conditions, not always trivial, which have in the past been tolerated without much complaint by the general population; this would appear to be reflected in the steadily rising demand for medical care as the economic well-being of a society increases. These and other factors tend to complicate the relationship between demand and need and make a precise forecast of either extremely difficult. We have endeavoured to weigh in broad terms the factors involved; our forecast of the output of doctors required represents the minimum, on the basis of past and present trends, that will provide an efficient and comprehensive health

service manned by doctors educated not only to cope with the medicine of today, but also to adapt themselves to the changing patterns of the future.

19. The resources to be considered are those of manpower and money, the former being at least as important as the latter. Medicine is a demanding profession which calls for intellectual and personal qualities of a high order in those who follow it. We are satisfied that the pool of available talent in this country is adequate to meet Britain's foreseeable need for doctors and that in the future there will be no lack of suitable candidates, especially with the improved career structure which we envisage. The implementation of our proposals will be expensive, but we think the scale of expenditure involved is within Britain's national resources. Reform and expansion of medical education are already overdue and urgent action is necessary if Britain is to maintain its position in the van of medical progress.

CHAPTER 2

THE FUTURE PATTERN OF MEDICAL CARE IN BRITAIN

THE IMPORTANCE OF REACHING A VIEW OF THE FUTURE

20. Our terms of reference do not in themselves require any assessment to be made of the future of medical care in this country, but the problems of medical education cannot seriously be considered without reference to it. Whatever changes may be made as a result of our recommendations will affect students who will be practising their profession in the twenty-first century, and although we could not hope to give an accurate picture of the practice of medicine in this country as far ahead as that we have nevertheless tried to form some picture of what may be expected. For this picture we have had to rely mainly on our own enquiries and observations. The nature of future changes was one of the first topics in a list of questions facing us, which we made available to witnesses on request; we were disappointed, however, to find that most of those who submitted evidence seemed unable or unwilling to venture any prediction of the future, but we wish to mention particularly the help we have received in this context from the Ministry of Health and the Scottish Home and Health Department (see Appendix 2).

21. The future pattern of medical care will be determined only partly by deliberate decisions: to a great extent it will be the result of developments in medicine itself, of movements within the society in and for which medicine is practised, and in particular of changes in the organisation of medical care which themselves will be determined to a considerable extent by the other two factors mentioned. In considering these three influences, we have been guided mainly by the general principle that speculation about the course of invention and discovery is a less reliable guide to the shape of the future than extrapolation of past and present trends, together with attempts to define existing unmet needs; we have tried to build up our picture of the future largely on the basis of what we have seen happening in recent years both in this country and abroad. We have been particularly conscious of the difficulty of making an assessment of the future without imposing upon it our own ideas of what it should look like, but we have tried as far as possible to consider impartially the direction in which past and present trends are likely to lead, whether or not we as a body or as individuals think they are desirable. Except to the extent that our own recommendations may, through their effects on medical education, change the future structure of medical practice, we think that our picture of the future represents by and large an honest attempt to portray the situation as it is likely to be, rather than as we necessarily wish it to be.

22. The structure of the medical profession in Britain had evolved into a sharply divided form twenty years ago, when an inevitable element of rigidity was introduced by the intervention of deliberate planning for a new aim, that of comprehensive medical care. One of our central tasks has been to consider whether the divisions of the past and present are likely to continue

in the future, and particularly to make some judgment on the future relationship between general practice and specialised medicine.

23. Other countries have adopted different assumptions when superimposing planning upon evolution, and we could imagine a number of alternative ways in which medical services might develop in this country. They might move towards a system in which all doctors were specialists and in which the general practitioner had little or no place: movements in this direction can be seen in the United States of America and elsewhere. A system on Russian lines involving several distinct types of doctor—the therapist, the paediatrician and the hygienist—supported by the less well qualified " feldsher ", is also possible. Medical services might be largely based on industry, as in Japan. Or something akin to our present system might remain, in which the general practitioner, while still maintaining his traditional role of family physician, might also play a valuable part in clinical medicine in hospitals and elsewhere. We have had to assess these possibilities against the background of history and current trends in medical and social organisation in this country. Our task would of course have been much simpler if some authoritative guide-lines had been available, but the conflicts and suspicions that have for so long divided the medical profession on organisational questions have only recently shown signs of giving way to rational planning. We can but hope that if and when an agreed view of the future of medical care is eventually arrived at by the profession and the country as a whole it will not be too dissimilar from our own.

FUTURE MEDICAL AND SOCIAL NEEDS

24. The dramatic changes that have taken place in medical diagnosis and treatment in the past quarter of a century tempt one to expect similar progress in the foreseeable future. But the problems now facing medical research are very different from those of the past, and we cannot foresee the precise solutions that will be found and adopted. We can expect only that there will be further major advances in medical knowledge, and that their effects on medical practice will probably be at least as important as in the past; we must accept, for our purposes, that their implications for medical education are more easily predictable in terms of organisation and methods than in terms of the content of medical teaching.

25. The amount of specialised medical knowledge, and of knowledge relevant to medicine in other fields, will of course continue to grow at great speed. Medicine shares the resulting problems with all fields of science; improved mechanical and organisational means of making knowledge available in a useable form will have to be devised on a general basis. Future expansion of medical knowledge will undoubtedly tend to make medical education an increasingly selective process for every student. This is not a new problem, however: the point has long been passed at which one person could have more than a superficial knowledge of all areas of medicine.

26. The introduction of new and more sophisticated techniques is likely to lead to important changes in medical practice. The use of computers and automatic equipment in medicine is still in its infancy, and is likely to be

developed widely and quickly both on the clinical and on the administrative side within the next thirty years. There is little doubt, for example, that the diagnostic skill which constitutes a major part of the expertise of the present-day clinician will need to be applied in a different way; his future counterpart will need to be a person who can take advantage of the opportunities offered him by new equipment and methods to gain access to a much greater amount of information relevant to his patient's condition. We have seen in routine operation in the United States of America a system for clinical examination in which such equipment and methods play a major part: in the course of a few hours the patient undergoes a number of diagnostic X-ray examinations and other tests, including a large number of blood analyses carried out by automatic equipment on a single sample; the results of these investigations, and the answers to exhaustive questionnaires completed by the patient, are fed into a computer which provides the doctor with a comprehensive medical description of the patient, together with tentative diagnoses and suggested treatment. Such developments obviously offer beneficial possibilities but they raise important problems and their net effect will be advantageous only if they are properly used. Inevitably, the doctor's approach to the individual case will have to be highly organised and systematic if he is to make effective and economical use of these elaborate services; at the same time he will have to continue to make a distinctively human contribution to the process by approaching the case with imagination and, by achieving a close personal relationship with the patient, eliciting information that no mechanical or organisational aid can provide.

27. Apart from individual practice, the routine provision of co-ordinated screening services involving the extensive use of computers will not only assist the early diagnosis of disease, but may incidentally provide background information of considerable value to the development of preventive medicine. Finally, the use of automatic systems of recording and retrieving information for administrative and research purposes is likely to be commonplace in all spheres of medical practice. Computers, with all their implications in terms of equipment, procedures and ways of thinking, will play too large a part in the work of all doctors in the future to be left entirely to the expert: every doctor should at least learn to understand their basic principles and potentialities.

28. Developments in society are likely to have organisational rather than technical effects on medicine. Many of the patients who will be treated by the doctors whose education is likely to be influenced by our recommendations are already alive or will be born fairly soon. In basic terms they will not be very different from the people now around us; the general social environment in which they will live has already been to a great extent determined. The pattern of illness to which the typical individual will be subject over the span of his life, or to which the community may be exposed in terms of epidemiology, has changed in the past and will no doubt continue to change but we cannot predict specifically what changes there will be. Developments in medical care in the United States, which are often thought to provide pointers to future changes in this country, offer a less helpful guide than might appear at first sight: social attitudes and the course of social change differ somewhat in the two countries. All available evidence from Britain and other countries

indicates, however, that we can expect, with continuing improvement in education and public knowledge of medical matters—and, we hope, rising standards of living—that better standards of medical care will be demanded and that people will expect treatment to be available for a variety of disabilities which in the past have been accepted to a great extent as inevitable. This applies particularly to various forms of mental illness; the growing tendency to seek treatment for these has already given a fairly widespread, although not necessarily correct, impression that their incidence has risen. The consequent increase in work for the doctor is not likely to be greatly affected by any foreseeable changes in the age structure of the British population. There will be greater demands for medical care, and for a different quality and range of medical care; in particular, there may well be demands for better standards of preventive care, or at least of early diagnosis.

29. The social position of the doctor himself is also liable to change in important respects. As progress in science and technology continues, attitudes towards doctors, as towards members of other professions, are likely to move still further in the direction of regarding them as experts to be called in to prevent, investigate and remedy specific functional defects rather than as members of an elite who are accorded a special status by virtue of their general background and qualifications. The very fact that the doctor is concerned with the most personal aspects of human health, and indeed with the fundamental matters of life and death, will ensure a continuing high prestige for his profession; but the esteem in which the doctor is held by the community in general will be determined much more by his demonstrated competence than by the mystique of his calling. A separate but related development is the increasing need for the doctor to work in close cooperation, both in diagnosis and in therapy, with people who are not medically qualified—not only with the scientists whose contribution to clinical assessment is becoming increasingly important, but also with the many others who have important responsibilities for the patient both in ancillary services and in other capacities, and above all with the patient himself—a patient better informed and more interested in science and medicine than some doctors have often encountered hitherto. The leadership which the doctor often has to exercise has sometimes in the past appeared to be based on the assumption of a charismatic authority which has already ceased to be convincing and in the future will be completely inappropriate. The basis of the doctor's leadership will be his superior knowledge of the central facts of the clinical situation, his ability to exercise a decisive influence on the patient's illness, and his capacity to guide and co-ordinate the work of others whose cooperation is essential.

PRESENT ORGANISATION OF MEDICAL CARE

30. The present-day organisation of medical care in this country is the result of a slow and spasmodic evolution since the middle of the nineteenth century. The most important feature of the pattern is its tripartite structure of hospital, general practitioner and local authority health services; the further development of these three elements over the past twenty years, since they were incorporated into the statutory design of the National Health Service, has been very uneven. From the point of view of medical education, we must

note with particular emphasis that the separation between specialised and general medical practice which grew up over the first half of this century, on a basis of differing clinical interests and education, has been reinforced by two further major differences: first, specialised medicine has been established firmly within the large hospital, while general practice has been left to the family doctor working in his local neighbourhood and sometimes in a small rural hospital; secondly, the fully-trained and competent specialist normally hopes to attain the rank of Consultant—carrying responsibilities, status, and privileges which the general practitioner, however well qualified or experienced, cannot hope to achieve under the present system.

31. In terms of function, the traditional " referral " system, which continues in operation although general practitioners and Consultants do not always have the personal knowledge of each other on which the system was based, ensures that almost all medical consultation in the first instance is provided by general practitioners, although in some places there is considerable direct access to hospital casualty and out-patient departments. A very substantial proportion of all illness, perhaps 90%,* is dealt with entirely within the ambit of general practice.

32. Virtually all the intensive care given in very serious illness, as well as the bulk of long-term institutional care, is provided in hospitals of varying size and type; apart from being the main repositories of specialised medical knowledge, they provide the diagnostic and therapeutic services needed for their own patients and increasingly make these available to the general practitioner on request. Such services, and the availability of beds in some—usually the smaller—hospitals for patients under the continuing care of the general practitioner, provide important help to the latter in his everyday work, but do not form a functional link between the practice of medicine in the hospital and in the community: more important from the latter point of view, though itself a minor feature of the whole organisational picture, is the employment of general practitioners as part-time " clinical assistants " to hospital specialists, usually in out-patient departments. About a fifth of general practitioners appear to hold such appointments.†

33. Routine examination of large sections of the population, such as school children, mothers and babies, is provided by special medical services under the local authority; such services often employ on a part-time basis doctors working solely in this field, many of them women with family responsibilities, or local general practitioners. In a few places groups of workers are covered by industrial health services in their daily place of work. The armed forces and the prison authorities maintain their own medical services, which in some places make a significant contribution to local medical care.

THE LIKELY FUTURE PATTERN OF MEDICAL CARE

34. For reasons discussed in the following paragraphs, we have come to the conclusion that the first step in the normal sequence of medical care for

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* Report of the Sub-Committee on the Field of Work of the Family Doctor, para. 26. H.M.S.O., 1963.

† Annual Report of the Ministry of Health for the year 1966, Cmnd. 3326. H.M.S.O., 1967.

the individual patient will continue to be a consultation, in the patient's home locality, with a doctor whose interests and qualifications extend over a broad range of general medicine and who will among other things fill the role of family physician; and that this will be followed if necessary by referral to a specialist. We foresee, however, that the present organisation will undergo considerable change, and that the future pattern of and relationship between the main branches of medical practice will be very different in many respects from what it is now. Special medical services for particular groups of the population will doubtless continue to be provided in some form by industry or public authorities, but these services are likely to be much more closely co-ordinated with general medical services than they now are.

GENERAL PRACTICE

35. The future of general practice has been the subject of much speculation and controversy in recent years. Our belief is that a service of this kind will continue to be needed. We appreciate that in some other countries, and especially in the United States, the general practitioner is said to be fast disappearing and to be losing the respect in which he was formerly held. On closer examination, however, we think that what is really happening is that standards of medical qualification are rising and that it is becoming more and more accepted that a doctor should have some advanced knowledge and training, even if in a rather broad field such as " internal medicine ", in addition to the basic medical qualification on which the old-style general practitioner relied. The recent report of the U.S. Citizens' Commission on Graduate Medical Education,* and the medical staffing arrangements of organisations which have demonstrated such spectacular growth and success as the Kaiser Health Plan in the United States, support the view that there is still a widespread need and demand for a " primary physician " of very broad competence and interests.

36. We see no evidence that there will be a large-scale move in this country towards direct access of patient to " specialist " in the narrower sense of the term; present-day thinking on the relationship between disorders of different systems of the body, and on the importance of the patient's material and social environment, points to the continuing need for a first-line preventive, diagnostic and therapeutic service which can deal in general terms with the total medical needs of the patient and when necessary guide him towards the appropriate specialised services; moreover, this function needs to be available to individuals and whole families as far as possible in the area where they live, where personal contact can readily be made with non-medical agencies able to help. The proportion of medical students over the country as a whole who look to general practice as their preferred career is not by any means big enough to meet the current need† but is nevertheless substantial (over 23% of final-year students in 1966—a much higher proportion than expected to go into any other of the main fields of medicine‡). In all the many medical schools we have visited we have found numbers of perceptive and intelligent

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* The Graduate Education of Physicians. Report of the Citizens' Commission on Graduate Medical Education. American Medical Association, 1966.

† LAST, J. M., *Lancet*, 1967, ii, 769.

‡ See Appendix 19, Table 5C.

students who see in this field the opportunity to play an essential and satisfying part in the medical care of the future.

37. Although we think that general practice will continue in essence it is bound to undergo great changes in the foreseeable future. To judge from the answers of witnesses to our questions, as well as from the vast amount that has been written and spoken in public in the past few years on this subject, many who have thought seriously about the future of medicine now accept that the single-handed general practitioner and the traditional domestic or street-corner consulting-room can have no place in the structure of good practice beyond the present generation. Nor will the small partnership be able in future to offer the skills and services needed for the effective practice of medicine.

38. The proper running and record-keeping of a practice already, purely from the point of view of organisational efficiency, calls for an investment in equipment and administrative help that can be economically justified only if shared by a number of doctors. Professional considerations likewise require that the general practitioner should in the future be freed from trivial or routine jobs which do not require the knowledge and skill of a fully-qualified doctor. The introduction of nurses and health visitors as integral members of medical practices has made considerable progress in the past few years. There will be problems in defining the kind of non-medical staff who can contribute most usefully to the work of a medical practice (something more than the traditional skills and qualities of nurses and social workers will be required), in recruiting and training enough of them to meet the very substantial need that will arise for them, and in working out the most appropriate and harmonious relationship between them and the doctor. The need and the trend are so obvious, however, that we can forecast with confidence a gradually increasing delegation of a variety of tasks from the qualified doctor to colleagues in other professions, although of course the doctor will remain in full charge of the patient's management and treatment and will closely supervise the work of his staff. This, again, will increase the pressures for larger units of organisation.

39. Despite some noteworthy exceptions the prevailing pattern of organisation in general practice is still dominated by the small partnership of two or three doctors, although group practices with up to six members are becoming increasingly common. In our opinion, however, the group of at least a dozen members has such economic and professional advantages, as well as advantages to patients, that although it will have organisational and administrative problems, the solutions to which may not be obvious in the traditional setting of general practice, it will probably become a widespread form of organisation in general practice, particularly in compact populations. A group of this size will offer the patient a wide choice of personal physician (within, of course, the limits of duty rotas and appointment systems), and an assurance of adequate emergency service at all times; it will allow the doctor to organise his working time and methods rationally and to develop a personal interest in a particular branch or aspect of medicine which will make a valuable contribution to the resources available within the practice as well as increasing his own satisfactions.

40. Even if smaller partnerships remain for a while in rural districts, we think that large group practices will often be found a practicable and desirable form of organisation for serving sparsely-populated areas: the management of rural groups may be based to a great extent on semi-autonomous sub-units, with outposts in the more remote areas perhaps manned by ancillary staff, but looking to a central headquarters for the provision of common services and relying on a good deal of functional specialisation among the doctors in the group as a whole. We have found from our own enquiries that no country in the world has really succeeded in persuading recent medical graduates to serve in outlying areas where they are necessarily denied access to specialised medical facilities and the constant company of other doctors, with its important implications for maintaining professional competence, and the amenities of social life which a highly educated young person normally expects. There will surely be a continuing trend towards the concentration of population in urban centres, and the widespread availability of transport and telephones will ease the lot of those who prefer, or are obliged, to live in the countryside. Distances in Britain are not great, and we think the newer generations will accept that good professional medicine, like good professional theatre, can be made available only where the necessary concentrations of skill and facilities can be brought together. When adequate arrangements for health education and prophylaxis have been established, the typical patient of the future—who will be better educated and better informed about health dangers—can be expected to take more responsibility for the management of trivial and self-limiting complaints, provided he is given the necessary encouragement and guidance by the medical profession: help in this respect may well be given in the course of normal schooling and in adult education.

41. The kind of general practice we see in the future will be based on proper premises, good equipment and well trained and organised staff. The setting in which these will best be found may vary, but the most obvious and natural setting is the health centre, a concept urged on general practice for nearly fifty years but showing signs of real acceptance only in the past two or three. We understand from the Health Departments that nearly four hundred local health centres seem likely to be in existence in England and Wales within the next ten years, and that sixty or more are being planned in Scotland. In most of the centres so far established, however, the general practitioners practise as individuals or in two or more groups which are largely independent of each other. We think such arrangements represent only one stage in a continuing evolutionary process, and that eventually all the general practitioners and the local health authority staff working in the centre will be linked together and will often become a single team. Nursing and ancillary help and equipment will be provided as an integral part of the centre. A number of the health centres which have been set up, particularly some of those in Scotland, have close links with the district hospital organisation. A growing number of centres will probably develop such links, which constitute one of the features most sharply distinguishing these centres from the typical group practice outside the health centre and in our view are likely to be one of the most important features of the health centre of the future. In due course the typical health centre seems likely to be fully equipped for routine diagnostic tests and directly linked to a computerised screening centre, probably located at or near a major district hospital, in which records of regular routine population

screening and the medical history of patients will be stored, and from which complete information regarding any patient—including possibly a tentative diagnosis—can be immediately obtained. Such centres might well accommodate the personal health services now provided by local authorities. Except perhaps when they are located near a major hospital we expect that centres will have in-patient accommodation for short-stay cases, and possibly facilities for minor surgery. There will of course be considerable problems of administration to be overcome before centres of the kind we envisage become a reality in Britain but we do not think these problems are insuperable.

42. We had from the authorities concerned a full description of the structure and function of the community medical services for the new town now being built at Livingston in Scotland. There an integrated health service will be based on the district general hospital, staff appointments at which are being made available for general practitioners who will work from one large health centre serving a population of 30,000 and several subsidiary centres each dealing with a population of about 10,000. The main centre will house the normal local authority health services and provide diagnostic facilities accessible to all practitioners at the main or the subsidiary centres. Thus there will be in Livingston a group of doctors who combine general practice, public health and hospital duties. Each will be expected to have some personal " special interest ", as distinct from formal identification with one of the recognised specialties. As domiciliary confinement is becoming less common, most maternity work will be concentrated in in-patient facilities; a maternity unit is being built into the main health centre, to be served by the staff of the centre.

43. In conditions such as these a quite new kind of general practitioner will be able to emerge, and general practice will be able to continue to play a major part in the health service of this country. There seems to us no reason why a doctor with appropriate training, and practising in this kind of environment, should not achieve equal professional satisfaction—and, moreover, a similar level of regard both within the profession and outside—to that of his counterpart in a major hospital.

HOSPITALS

44. The main feature of the British hospital service in the foreseeable future will undoubtedly be the district general hospital, seldom with less than 800 beds, serving a population of perhaps 150,000 and providing treatment and diagnostic facilities for in-patients and out-patients in a wide range of specialised fields.* The concept of a major multi-purpose hospital, often supplemented by local clinics and diagnostic centres, has been the basis of public hospital planning for a number of years, and seems likely to stand unchallenged in principle because it offers the most effective and economical way of bringing together the resources of modern medicine and putting the full range of hospital services at the disposal of patients; the biggest single problem affecting hospitals throughout the next twenty-five years, at least, is likely to be a shortage of resources of all kinds. The precise functions of

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* *Cf.* A Hospital Plan for England and Wales, Cmnd. 1604, p. 6. H.M.S.O., 1962.

the district general hospital have not been conclusively defined, and they will presumably go through the normal process of evolution over time; but some of the implications for the general pattern of future hospital care, and hence for medical education, are clear enough.

45. First, the hospital will not provide primary medical care, except in emergency. There will be a steady movement in the direction of larger and fewer hospitals which will lend further point to the need, mentioned in paragraph 36, for an effective service of general medicine nearer the patient's home. Apart from the question of accessibility to the patient ease and of contact with local social services, it would probably be impracticable from a purely administrative standpoint to accommodate on one site not only the district hospital's own services and staff but also all the doctors and ancillary staff needed to provide general medical services for the population served by the hospital. It may often be found desirable and convenient, however, especially in urban areas, for one of the local health centres to be located alongside or even within the district hospital. This will go further towards breaking down the present distinction between the hospital doctor and the general practitioner and promoting the acceptance of equal status for them (see paras. 30, 43 and 48).

46. Secondly, there are likely to be changes in the internal organisation of hospitals and their medical staffing. The concentration of hospital services into fewer and larger units will reinforce the trend towards Consultants' being based mainly if not wholly on a single hospital, in contrast to the multiple attachments common twenty years ago and still found extensively in the Metropolitan regions (see paragraph 513). Moreover, the continuing shortage of resources will lead inevitably, in the more expensive branches of medicine, e.g. cardiac surgery, to a concentration of work into a limited number of units each serving at least a sufficiently large population to ensure the practice necessary for the maintenance of professional competence. Single specialty hospitals, with some possible exceptions, are likely to disappear. In the large general hospitals which seem likely to form the major part of the hospital service, there will probably be representation of all the main specialties, including psychiatry. Only some hospitals, however, are likely to provide full facilities in specialties or branch specialties requiring very expensive equipment or rare expertise; such facilities will probably be distributed rationally throughout the country, without unnecessary duplication in large centres of population.

47. Hospitals in Britain have hitherto been organised internally in small and entirely autonomous clinical units. This system has ensured that every patient has been under the personal charge of a Consultant and has provided an admirable basis for apprenticeship training. On the other hand it has hindered the emergence of any clearly defined educational policy for a hospital as a whole, impeded the formation of cohesive teaching teams and restricted the freedom of medical schools to change their aims and methods. There is now a clearly visible trend towards the grouping of " firms " into departments, and a tendency for the departments to be grouped into " divisions " is beginning to emerge, at least in teaching hospitals; we have no doubt that

these trends will continue with increasing impetus as a result of the recommendations recently made by official working parties on hospital organisation.* Although at the moment the divisional structure that is emerging tends to be built around surgery and medicine there is reason to suppose that before long these traditional categories may give way to others, based perhaps on body-systems, with the result that comprehensive gastro-intestinal, cardiac and similar units may become important features of hospital organisation. Moreover, we do not believe that the present requirement for the most junior members of each small clinical unit to be on call every night can be maintained much longer; a movement in the direction of rota systems, allowing a reduction in night staff, can be expected. Economy of space, equipment and personnel is likely to lead to more widespread establishment of single instead of multiple arrangements for the reception and management of emergencies of all kinds. Economy will in the same way probably lead to the concentration into one service department of many currently scattered areas of investigation and measurement in clinical physiology such as electrocardiography, electroencephalography, pulmonary function and thyroid function.

48. This rationalisation of staff organisation, which we think is likely to spread throughout the hospital system, will probably be accompanied, or perhaps preceded, by changes in the staff grading structure which will have a substantial and direct effect on the kind of organisation needed for post-graduate medical education in the future. The Platt Working Party's recommendations† in 1961 led to a breakaway from the tradition that hospital medical staffing below Consultant level should be provided almost exclusively by young doctors in training who aspired eventually to become Consultants themselves. A new career grade, unfortunately named Medical Assistant, was introduced to provide permanent appointments for doctors with several years' service as Registrars and for those Senior Registrars who were unable to obtain Consultant posts on completion of their training period; the new grade was thought to be suitable also for the part-time employment of experienced general practitioners with visiting hospital appointments. The grade has not proved popular for two reasons: the first was its name, and the second was the conception that the Medical Assistant would work only as an assistant to a Consultant, and should not treat cases without reference to his senior. We think the view of the profession is changing on these two matters and that a new grade, with a more appropriate title, perhaps that of " Hospital Specialist ", will soon be introduced (see paras. 102–104); and, furthermore, that a doctor holding an appointment at this level will be expected to take cases in his own right for the whole of their investigation and treatment, it being understood that like all hospital doctors in the future he will work as one of a team and will seek advice and guidance when necessary. Senior clinical posts, and particularly those implying the headship of a hospital department or the leadership of a specialist team, will of course be filled by Consultants, who will often be expected to assume responsibilities much

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* Report of the Joint Working Party on the Organisation of Medical Work in Hospitals. H.M.S.O., 1967.

Report of the Joint Working Party on the Organisation of Medical Work in the Hospital Service in Scotland. H.M.S.O., 1967.

† Report of the Joint Working Party on Medical Staffing Structure in the Hospital Service. H.M.S.O., 1961.

wider than those involved in leading a " firm " of the traditional kind In our view, the acceptance of these changes will make possible a significant rationalisation of training arrangements as well as improvement in the staffing of hospitals and an easier provision of concurrent appointments in hospital and outside service. Although hospitals may not be able to offer functional posts to all the members of group practices in the surrounding area each hospital will probably be able to offer facilities to some members of such practices for treating their patients; the general practitioners concerned will thus become available, as Specialists or Clinical Assistants on the staff of the hospital, for consultation on the general aspects of other cases. In this way, the present hard and fast distinction between general practice and hospital practice may be expected gradually to recede, to the general benefit of the profession and of the public (see paras. 30, 43 and 45).

49. These developments will imply a considerable increase in the administrative responsibilities of Consultants, and particularly of those serving as heads of departments, who will presumably be elected or nominated for this duty in rotation; training in management and administration will be essential.

OTHER SERVICES

50. The future of the third element in the present structure of medical care in this country, the special services providing treatment or diagnosis for particular groups of the population, is most difficult to predict. The Gillie Committee envisaged that family doctors would find an increasing interest in the circumstances in which their patients live and work, and would participate more in clinic work among those groups which are at present the responsibility of public health departments.[*] The Mallaby Committee has made recommendations implying that local authority medical services might with advantage be closely integrated with the other branches of the National Health Service.[†] Paediatric and geriatric services may well be increasingly provided through the health-centre group practices, the likely growth of which we have described above, and which will be well suited to provide such services. The Association of Municipal Corporations has pointed out to us, however, that experience of general practice in itself does not provide an adequate background for work of this kind, and we have noted that a recent survey of paediatric teaching in this country[‡] shows that many doctors entering general practice at present have little training in this field, in strong contrast to the situation in some other countries. We have no reason to think that the position is different in respect of geriatrics. The provision of separate paediatric and geriatric services has serious implications for economy and effectiveness in the use of resources; if adequate paediatric and geriatric training is provided at postgraduate level for doctors whose main work lies in the broader field of general practice (we make some relevant recommendations in Chapter 3) a good part of these services may well be merged with general practice.

51. Whatever part of their present clinic work is undertaken in future as a part of general practice, the other functions of local authority medical officers

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[*] Report of the Sub-Committee on the Field of Work of the Family Doctor, p. 39. H.M.S.O., 1963.

[†] Report of the Committee on the Staffing of Local Government, p. 71. H.M.S.O., 1967.

[‡] JACKSON, A. D. M., *British Journal of Medical Education*, 1966, 2, 25.

will diminish considerably. Their responsibilities in connection with environmental hygiene seem likely to pass increasingly to technically qualified lay officers, and the Committee on Local Authority and Allied Personal Social Services (the Seebohm Committee) is considering some other aspects of their work. If the current deliberations of the Royal Commissions on Local Government lead to a reduction in the number of local authorities and an increase in their typical size, while at the same time there is a movement towards integration of public health responsibilities with other branches of the health services, the Medical Officer of Health in his traditional form, with both clinical and administrative functions, may well disappear completely. On the other hand, the increasing importance of the functions of medical administrators in central government and the hospital service, and the growing recognition of the administrative implications of the decisions that have to be taken by every doctor in a responsible position, mean that greater attention will have to be paid to training doctors as administrators and managers.

52. The Confederation of British Industry has expressed to us the view that there is an urgent need for the more widespread development of health services in British industry. Industrial medical services have shown remarkable development in Japan and Czechoslovakia, and even in the United States of America despite the high mobility of labour there. The Ministry of Labour has told us, however, that such services in this country have not expanded very much in recent years. The main reason for this does not, we think, lie in the pattern of employment or the nature of the relationship between employer and employee in this country, but rather in the fact that this country has given first priority to the establishment of a comprehensive system of medical services fully available to all sections of the community. The existence of such a system must limit the scope of the services demanded of British industrial medicine, and we do not expect any major changes in this respect in the foreseeable future.

53. The medical services of the armed forces are not likely to develop on such a scale as to make any major impact on the general pattern of medical care, though we have noted with interest that there has been a tendency for hospitals built in recent years primarily for military purposes to be fitted into the general hospital system; this tendency may well continue and increase. Likewise, the Home Office's evidence to us suggests that prison medical services are becoming increasingly integrated with the medical services of the community in general, as regards both staffing and use of facilities.

IMPLICATIONS FOR MEDICAL EDUCATION

54. We foresee no sudden revolutionary change in the pattern of medical services and care, but the evolution of the present system as we have outlined it above will involve great changes: in particular, the doctors of the future will work in bigger organisations, with better facilities than those that are familiar to most doctors to-day. This has important implications for medical education although some of the educational changes which will be necessary will likewise come slowly over the years, as emerging needs become more easily recognisable.

55. Perhaps the clearest and most important difference between the present pattern of medical care and the future pattern as we see it lies in the relationship between the main branches of the medical services. A steady movement towards integration of hospitals, general practice and local authority services and strong pressures towards interdependence and cooperation among doctors within each of these broad fields, can be seen wherever one looks; this movement must be reflected in every stage of medical education. A corollary of these changes will be the gradual weakening of the present distinction between " specialists " and " general practitioners " as generic categories in a rather hierarchical relationship, and its replacement by a broad structure of vocational specialties, each with its own requirements of particular skills and proper training, and each carrying its proper share of esteem as a full partner in the system. In the following chapters we follow the educational implications of these likely developments. At the postgraduate level, they demand proper professional training and recognition in each field, based on a common foundation of general professional training with full provision for training in the responsibilities of management and of cooperative leadership which will be part of the work of every doctor. At the undergraduate level they require a common framework of general education, with provision appropriate to the many different backgrounds from which students will be drawn and to the varying interests which they will hope to satisfy in their later professional life.

56. The second aspect of the future to which we must draw particular attention is the process of change itself. We have looked forward not merely to a future situation which is different from the present, but to a future in which change is constant and normal. The doctor of the future must, therefore, be educated not so much for the future as we now see it but for a world in which everything—the content of medicine, the organisation of medical care, the doctor's relationships with his colleagues and the community, and indeed every feature of his professional life and work—is on the move. Only if our recommendations succeed in producing a system of medical education which can prepare a doctor for this kind of life will they have lasting value.

CHAPTER 3

POSTGRADUATE EDUCATION AND TRAINING

INTRODUCTION

57. There has been much improvement in postgraduate training over the past few years. A large number of postgraduate medical centres have been established in district hospitals by the energy and enterprise of local doctors. Money has been raised by local appeals, generous assistance has been given by the Nuffield Provincial Hospitals Trust and King Edward's Fund, and increasing support provided by regional hospital boards and the Health Departments. Although there is considerable variation between regions both in what is provided and in the effectiveness of the coordination between hospital boards and universities (through the postgraduate deans), some degree of organised postgraduate and continuing medical education is now offered in the majority of district hospitals. We welcome all these developments. Much remains to be done, however: until very recently there has been a notable lack of any attempt to study comprehensively the educational and manpower requirements of all the fields of medical practice or to provide a coherent plan for the training and career of the individual doctor.* The establishment in 1967 of a Central Committee for Postgraduate Medical Education (Great Britain) is a very welcome step in the right direction.

58. In the past, apart from the hospital specialist aspiring to Consultant status, most doctors were not required to undergo organised training beyond their undergraduate medical education, supplemented latterly by a compulsory year of approved hospital experience; the resultant disparity of training led to a wide difference in the relative standing of the hospital doctor and of the general practitioner. Furthermore, undergraduate medical education became increasingly dominated by the specialisation which now pervades the teaching hospitals, and a widening gap developed between what could be accomplished in hospital practice and what a doctor could do in general practice. Those who by choice or necessity became general practitioners have often, not surprisingly, felt themselves inadequately provided for with regard not only to clinical facilities (with which we are not concerned here) but also, particularly, to postgraduate training.

59. The problem is not merely to bring training for those going into general practice and other fields into a closer relationship to training for hospital specialties. In every branch of medicine young doctors are dissatisfied with the absence of information about the prospects offered by alternative careers, the lack of clearly defined paths towards them and the inadequate or uncoordinated provision of appropriate training. We think that doctors in every branch of medicine now need several years' postgraduate training, and in view of the speed at which medicine and medical care are advancing no

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* REVANS, J. and McLACHLAN, G., Postgraduate Medical Education—Retrospect and Prospect. The Nuffield Provincial Hospitals Trust, 1967.

doctor should lack the opportunity of further education at any time in his career. Postgraduate medical education should therefore be extended and reorganised so as to provide a systematic and rational progress from basic qualification to the appropriate level of career competence, and to maintain that competence thereafter. We think the most appropriate pattern for the professional training of British doctors would be the following:

(a) An *Intern Year*, corresponding broadly to the present pre-registration year, during which the medical graduate would begin to take responsibility for the management of patients, would acquire a sound grasp of general clinical method and would gain confidence, judgment and understanding under proper guidance in conditions approved by a university.

(b) *General Professional Training*, lasting about three years and embracing the present Senior House Officer and Registrar grades in the hospital service, in which the young doctor would be given systematic and varied experience in the general field wherein he hoped to make his career.

(c) *Further Professional Training*. After successful completion of general professional training, the next stage would either be the continuation of training on a less intensive basis, merging into the normal responsibilities of a professional career, or else a period of a few years' intensive advanced training—varying in length in different specialties or branches of medicine—which would be designed to bring the most able hospital doctors more quickly than others to the point where they might reasonably expect to be considered for Consultant appointments.

(d) *Continuing Education and Training* for all doctors in career posts, varying in time, method and intensity, with the object of keeping them abreast of developments in their own branch of medicine and in medicine generally.

THE INTERN YEAR

60. Before 1953 there was no compulsory training for all doctors after the completion of the undergraduate medical course: admission to the Medical Register was conditional only on the possession of one of the primary medical qualifications specified in the Medical Acts. The Goodenough Committee,* reporting in 1944, recommended amendment of the Medical Acts to provide that a man or woman obtaining a registrable qualification should not be entitled to registration until he or she had held approved house appointments for a prescribed period, envisaged as twelve months equally divided between general medicine and general surgery. The hospitals in which such appointments might be held would be approved by the universities, who would advise the General Medical Council of their decisions so that a comprehensive list could be maintained. The Committee stressed that doctors in these posts should still be regarded as students and should be allowed time for study, but that there should be no examination at the end of the pre-registration period. Legislation to give effect to these proposals was enacted in 1950 and came into effect on 1st January, 1953.

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* Report of the Inter-Departmental Committee on Medical Schools, p. 202. H.M.S.O., 1944.

61. Virtually all the evidence we have received on this subject approves in principle the concept of an initial period of compulsory postgraduate training of this kind. Almost all doctors now accept that the undergraduate medical course does not provide sufficient training for the immediate practice of medicine, that further training under supervision is necessary before a doctor is registered, and that this training should take place in hospital. Witnesses have differed in their views on whether the period should remain one year or should be extended to two or even three years. There is, moreover, much dissatisfaction with many of the posts that have been used for pre-registration training and with the inadequacy of supervision and the time available for study and reflection.*

62. We think that several years' postgraduate training is necessary for any doctor, no matter what branch of medicine he intends to engage in, be it general practice, a hospital specialty, laboratory medicine, teaching or medical administration. This does not mean that the present pre-registration year is no longer necessary as a statutory requirement in itself and might simply become the preliminary stage of a comprehensive scheme of obligatory postgraduate training as, in effect, has been recommended by the U.S. Citizens' Commission on Graduate Medical Education.† Though this could be the pattern for the future we think that for the present a clearly distinguishable period of compulsory initial postgraduate clinical training, common to all doctors, should be retained and should remain at one year; it would, as at present, be followed by registration, which would imply no more than that the doctor had satisfactorily completed his basic medical education. A longer compulsory period of postgraduate training for all doctors before they became eligible for inclusion in the Medical Register would cause unnecessary difficulty to prospective laboratory workers and others not intending to go into clinical practice and to women graduates who wished to postpone entry into a particular branch of medicine until family responsibilities had lessened. We have also taken into account the needs of graduates from British medical schools who will seek their careers and further training abroad, particularly in the developing countries.

63. We regard the intern year as essentially a period of training in general clinical method and responsibility which all doctors must have, especially if the undergraduate course is modified in the way proposed in Chapter 4, so that there will be some reduction in the clinical experience which has hitherto been obtained before graduation.

64. After having spent at least five years as an undergraduate, the need and the wish of the newly-qualified doctor in his first postgraduate year is not so much for formal educational activities as for some real clinical responsibility and experience with patients; hospital duties must be his main occupation in the future as they are now. The young House Officer should be under the supervision of a Consultant of high standard who has time to give thought to the most appropriate methods of teaching and can systematically plan and carry

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* HUTTON, P. W., WILLIAMS, P. O., GRAVES, J. C., GRAVES, V., *Lancet*, 1964, i, 38.

ILLINGWORTH, C., Training Facilities for Junior Hospital Staff. Glasgow Postgraduate Medical Board, 1966.

† The Graduate Education of Physicians. Report of the Citizens' Commission on Graduate Medical Education. American Medical Association, 1966.

out the instruction required so that the young graduate receives a good clinical training.

65. There is general agreement in the evidence which we have received that universities should exercise much stricter supervision over posts for the intern year than they have done in the past. We think that the responsibility for approving these posts should be placed firmly on those universities which have undergraduate clinical departments. Each such university should be responsible for the selection and inspection of posts in its own area, which should normally be defined as the hospital region in which the university is situated (subject, in London, to our proposals in para. 479). We think that a graduate should normally spend his intern year in the area of the medical school which provided his clinical education. If he goes to another area he should be transferred to the care of the university responsible for the approval of posts in that area, but the graduate's own clinical school should maintain a close interest in him and arrangements should be made between the universities concerned for effective supervision during the year. Overseas students at British medical schools should normally be expected to serve their intern year in Britain. Only in very special circumstances should a graduate of a British medical school be given permission to spend part or all of his intern year outside Britain, and then only if the university is satisfied on the basis of comprehensive and up-to-date information that in the posts to which he proposes to go he will receive training appropriate for admission to the British Medical Register.

66. We think that the present arrangement whereby six months of the pre-registration year are spent as a house physician and six months as a house surgeon is in general satisfactory, provided that the posts are properly selected and supervised and that during this year the trainee has some responsibility under supervision for ordinary emergency admissions and for the treatment of casualties. We welcome the General Medical Council's assurance to us that they intend to interpret "medicine" and "surgery" flexibly in this context; the trainee might, for instance, be given some experience in paediatrics, gynaecology, dermatology or psychiatry within the general framework of an attachment to a unit of general medicine or general surgery. We hope that wherever possible arrangements will be made between medical and surgical units to enable the young graduates based on each to take part in ward rounds, conferences and other educational activities of the other. The two periods of training in this year should be designed to be complementary. The university responsible should not certify that pre-registration experience has been satisfactorily completed until it is satisfied that the young graduate has held two posts which are not only suitable in themselves but together form a suitable combination; we recommend that the Medical Acts be amended accordingly. We do not regard obstetrics as appropriate in itself for the intern year but as a subject for later professional training; for those proposing to study obstetrics later, experience during the intern year in paediatrics, urology or abdominal surgery would be useful.

67. In general the criteria set out in paragraph 64 of the General Medical Council's 1967 Recommendations (see Appendix 3) are in our view a satisfactory basis for the approval of intern posts, but we feel that a post should not

normally be regarded as suitable unless the Consultant who would be responsible for training has both interest and ability in teaching and spends at least six sessions a week at the hospital; we appreciate that at present this latter criterion might be difficult to meet in some areas. To ensure that the accepted criteria are complied with, representatives of the university (probably members of the staff of its medical school) should keep in touch with its young graduates in their intern year and periodically visit all the hospitals involved to see that the training requirements are being properly met. Approval of a post should be withdrawn without hesitation, if necessary after consultation with an external adviser from another region, if the post appears to be unsatisfactory. Not all hospitals will have suitable posts: some posts in teaching hospitals are less suitable—because, for example, they are extremely specialised—than posts in good district hospitals.

68. In 1966 22% of the final-year students in British medical schools were already married.* Many more marry when they graduate. Hospitals ought to provide married quarters for an appropriate proportion of their House Officers and deficiencies in this respect should be remedied as soon as possible; nevertheless, although actual residence in a hospital is itself an educational experience at this stage of training, we do not think House Officers need live in during the whole of the week. Obviously the houseman must live in hospital whenever he is on emergency duty and the hospital must always have a sufficient number of medical staff quickly available to meet any major emergencies. Moreover, the houseman must do a night round, seeing his patients after the night nursing staff has come on duty. The houseman could meet these requirements if he lived within walking distance of the hospital and had a telephone, or lived within a few miles of the hospital and had a telephone and suitable personal transport, and if he were prepared to stay in the hospital for two or three nights in each week. He would have to recognise, of course, that even when not actually in hospital he would still be on duty and should be immediately available, except during recognised off-duty periods when he had properly handed over his reponsibilities to some other person.

69. The medical school should make itself responsible for ensuring that all concerned are fully aware that the purpose of the intern year is to complete the young doctor's basic medical education, and of the implications of this, and should be prepared to give advice and guidance to graduates on suitable training posts. At some centres arrangements for matching graduates to posts throughout the area work reasonably well; every university with a medical school should establish a satisfactory procedure for arranging a suitable combination of posts for its new graduates, taking account of their needs as well as their abilities. We think that no arrangements for appointment to approved training posts for the intern year should be made before a medical student reaches the final year, and that preferably the arrangements should be made only after the final examination. The filling of posts by private arrangements between Consultants and students should cease, though the preferences of trainers and trainees should be respected as far as possible. Different universities will no doubt make suitable arrangements in different ways; we suggest that one way would be the display of a list of all approved posts

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* See Appendix 19, Section A, II(*c*).

in the area, on which final-year students could indicate their own preferences and see the preferences of others.

THE PRESENT PATTERN OF TRAINING FOR THE HOSPITAL SPECIALTIES

70. At present the young doctor who continues his postgraduate training in hospital will usually, after completing the compulsory pre-registration year, take a post as Senior House Officer. He will probably hold this for only a year, and in practice must start looking for his next job, as a Registrar, after eight or nine months at the latest. He has to rely a good deal on chance for the availability of a suitable job at the right time to enable him to continue his training; he often has to travel to several different places for interviews and at the same time he may be sitting examinations such as the first part of the Membership examination of the Royal College of Physicians or the Primary examination for the Fellowship of the Royal College of Surgeons.

71. During the next two years or so in the Registrar grade, the intending specialist hopes to obtain a higher qualification by passing examinations such as those for the Membership of the Royal College of Physicians or the Fellowship of the Royal College of Surgeons (see paras. 87–92). Unless he succeeds he will have little chance of being selected for further specialist training in the Senior Registrar grade: indeed, in some specialties in which the number of applicants for Senior Registrar posts far exceeds the number of vacancies, particularly in general medicine and general surgery, possession of a higher qualification is certainly no guarantee that a Senior Registrar appointment will be obtained. Despite its importance in the specialty training process, the Registrar grade offers no certainty—or even a reasonable assurance—of suitable training facilities and experience. The recommendation in the Platt Report* that Registrar posts should be of limited tenure has not been acted upon, and the grade has been allowed to expand. In September 1966, of the 2,217 British-born Registrars in England and Wales 473 had been in this supposedly training grade for more than three years and 283 for more than four years; over one thousand were aged between 30 and 34 and nearly four hundred were 35 or older.† Because many Registrar posts meet service rather than training needs the availability of a post in which suitable training will be received has become haphazard. Thus, Senior House Officer and Registrar appointments do not at present usually comprise a planned postgraduate education following the pre-registration year.

72. At present virtually any training which junior hospital doctors receive is directed towards the hospital specialties and none to any other branch of medicine. Only a minority will make their ultimate career in the hospital service, however: there are many more doctors in junior hospital posts than can ever hope to become Consultants, and the only other senior career grade in the hospital service (Medical Assistant) is not popular, for reasons we have given in Chapter 2. Many junior hospital doctors intend from the first to

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* Report of the Joint Working Party on Medical Staffing Structure in the Hospital Service, H.M.S.O., 1961.

† On the State of the Public Health. Report of the Chief Medical Officer of the Ministry of Health for the Year 1966, p. 218. H.M.S.O., 1967.

make their careers in general practice or other non-hospital work; others leave the hospital service disillusioned when they fail, as many must, to obtain an appointment as a Senior Registrar. Senior Registrar appointments, for those who attain them, vary considerably in the further training that they offer. Many include a period of service at a regional hospital which may offer a wider range of experience but may require the doctor and his family, often including children of school age, to move at short notice from one city to another. Posts often fill essential service needs and cannot easily permit the completion of a desired training. As a result, training is often unnecessarily diffuse and prolonged.

73. Our proposals for improving postgraduate professional training, which are put forward in the following pages, are of a kind for which a need has been felt for many years. We propose first a coordinated general professional training, normally lasting three years; and, after a review of the present arrangements for postgraduate examinations and qualifications, we put forward an improved approach to the assessment of general professional training. We then discuss the later stages of professional training, and look briefly at the special considerations arising in the application of our general principles to certain specific fields of medicine.

GENERAL PROFESSIONAL TRAINING

74. In our view the years immediately following the intern year present the most urgent problems, both because of the number of trainees involved and because of the present disorganised state of training during those years. The present provision of separate and unrelated courses for specialist qualifications takes up a great deal of teachers' time and although important differences of interest, knowledge and skill will no doubt remain between specialties, at least for a long time to come, we think that if adequate training is to be made available for all doctors every effort must be made to find and emphasise the common features, which are often substantial, rather than the differences. The training of the future general practitioner, the Consultant physician and the paediatric specialist, for example, need not differ greatly, particularly in the early stages. Courses common to a number of specialties could be arranged in clinical science, e.g., biochemistry and pulmonary physiology, and some further knowledge of clinical pharmacology is essential for all who prescribe drugs. Pathology plays an important part in postgraduate training in many branches of medicine; the facilities and staffing of many pathology laboratories must be improved if they are to make their proper contribution to professional training. There are many branches of clinical medicine in which a greater than average knowledge of community medicine is desirable (see paras. 133–144); opportunities should be created for interested young clinicians in all specialties to get experience in epidemiological research methods, training in the epidemiological and statistical aspects of their own specialties, and a simple introduction, in courses provided by universities, to the principles of management and operational research. Consideration should be given to providing, in all large hospitals,

formal instruction in this subject and in psychiatry, to be open to all first-year trainees irrespective of the field in which their current appointment is held. Most doctors will at some time be expected to undertake some form of teaching; accordingly, in addition to the valuable part already played by scientific societies in providing young doctors with experience of public speaking and constructive criticism of their performance, the availability of short simple courses of basic teaching techniques would be useful to all doctors.

75. Common elements such as those mentioned in the preceding paragraph should, together with the elements specifically appropriate to each specialty, be incorporated into systematic three-year schemes of general professional training available to all doctors in Britain, including graduates from overseas. An essential feature of the new training scheme would be the trainee's progress through a planned series of six-month or twelve-month appointments. For each specialty training appointments of certain kinds would be essential and others optional. In Appendix 5 examples are given of the appointments which might be regarded as compulsory and optional in certain specialties. Many kinds of appointment would, we think, be recognised as equally appropriate for a number of specialties; thus, if the career plans of a young doctor were to change, much of the training he had already undertaken could be credited towards what was required for his new choice. All the appointments would usually be held within one geographical area, to avoid the annual job-hunting and concomitant upheaval which at present beset the trainee. He should not be forced to move unless the training he needs cannot otherwise be provided. On the other hand, he should not be prevented from moving to another centre during the general professional training period if he so wishes.

76. During these three years young doctors should be allowed, if they show the aptitude, to undertake worth-while research without being penalised financially; if a trainee spent part of his general professional training period in approved full-time research, he should be allowed to pursue his research interest thereafter on a part-time basis. Any research done should be taken fully into account in the assessment at the end of the period (see para. 93). We hope very much that any who show enthusiasm and ability for research will be encouraged to begin some original work at this stage: new ideas and quests for fresh horizons are essentially qualities of youth. The three-year series of appointments would also allow a trainee to be seconded overseas during the period with the knowledge that he had a position in this country to which he could return.

77. We hope that young doctors will not hesitate to spend their general professional training period away from the area of the university at which they received their basic medical education. There is a tendency for graduates, often the best, to seek further appointments at their undergraduate teaching hospitals; but we hope that every effort will be made to achieve more movement between areas at the end of the intern year, because it can have great educational value for both trainers and trainees. A prospectus of the training schemes available in each area, including appointments at universities and teaching hospitals, should be published and deans should encourage trainees to go to areas other than their own.

78. The general professional training scheme would be vocational rather than academic in nature and would be based on a series of appointments in which the young doctor would render professional service simultaneously with his training. Nevertheless, emphasis should be placed throughout on applied scientific methodology. With the help of universities, the practical training should be accompanied by systematic education and training, with lectures, seminars and demonstrations based as far as possible on features common to different specialties or fields of practice (see para. 74). The trainees should have sufficient time for these educational activities and to assimilate their experience and knowledge. We welcome the Health Departments' recent circulars* on study leave for hospital doctors and hope that trainees will be allowed to accumulate their study leave over the three-year period to enable them to attend full-time training courses lasting several months when this is in their interests.

79. Training appointments should not be limited to hospitals. Many doctors will benefit from short appointments during this period as trainees in general practice, in research or in administrative posts. Prospective medical teachers and others whose interests and capacities make academic appointments or long university courses a desirable part of their training should be allowed to count these, to the extent that they are relevant, towards general professional training requirements. Flexibility should be possible without losing the administrative convenience of the trainee's being regarded as an employee of the hospital authority through the general professional training period (see para. 85).

80. A training scheme on these lines would require the accreditation of approved posts in teaching and district hospitals and elsewhere; strict criteria should be laid down and hospital posts should be approved only where they are under the supervision of Consultants prepared to take an interest in and actively teach young doctors. We recognise that our proposals for postgraduate education and training will make heavy demands on the time of senior staff, particularly in hospitals, and that more appointments will be necessary if both teaching and service responsibilities are to be met. Regular inspection of posts will be essential to make sure that they provide appropriate training and experience and that the trainees are not used merely to meet service needs. Any hospital posts not approved for training should be filled by experienced Hospital Specialists (see paras. 102–104) or by Clinical Assistants, as appropriate.

81. The Platt Working Party† concluded that there was no essential difference between the duties of some Senior House Officers and those of Registrars, and we consider that these two grades should be merged into a new general training grade of Registrar which would meet the needs not only of those who hope to make their career in hospital specialties but also of those who will seek other careers in medicine. Trainees at different stages within this grade would of course be capable of taking different degrees of responsibility, and should in the third—and perhaps in the second—year be able to exercise some supervision over less experienced Registrars and House Officers.

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* H.M.(67)27 for England and Wales; S.H.M. 29/67 for Scotland.

† Report, paras. 86 and 89.

82. Women doctors with family responsibilities should be given every opportunity to undertake part-time training over a longer period, with provision made for crèches at the hospital and for maternity leave as required. We have been impressed by the scheme introduced in the Oxford region* for the return of married women doctors to employment in hospitals in part-time posts in which training and experience are given. We should like to see schemes on similar lines introduced in all regions so that women might more easily obtain, particularly in highly-competitive specialties, part-time posts which have been approved for general professional training. We also welcome the special scheme for postgraduate education for doctors who wish to return to medicine as general practitioners, announced by circulars of the Health Departments in 1966,† and we hope that this scheme can be adapted to the arrangements which we propose (see paras. 114–123) for professional training for general practitioners.

83. Overseas doctors who come to this country for general professional training should have opportunities similar to those of British graduates; a certain number of approved posts, over and above those needed to fill expected future career posts in Britain, should be set aside for them.

84. The administration of the training scheme—both as regards central planning, coordination, setting of standards and requirements and as regards implementation throughout the country—will be a major operation. Later in this chapter we discuss the administrative requirements in more detail and put forward proposals as to the machinery which we think is needed.

85. We think the details of the machinery for selection and appointment to general professional training posts should be worked out by the central and regional organisations whose establishment we recommend in paras. 175–194. The actual appointments would presumably be made by the hospital authority, university or other body responsible. In order to provide a planned series of posts for each trainee the arrangements for appointment must be closely coordinated, as they already are in some teaching hospitals. We think that all appointments to approved general professional training posts in a region will probably have to be synchronised, with opportunities for change twice a year. We also think that the operation of the scheme would be greatly simplified if all doctors in general professional training were to be borne on the books of the appropriate hospital authority for administrative purposes, even when serving temporarily in a non-hospital appointment which formed part of an approved training scheme.

86. Towards the end of the intern year there must be some mechanism for contact between the graduate and his medical school, so that his plans for general professional training can be seriously discussed. Although facilities would exist for changes of career plans to be made during the later stages of training, the interests of trainees and the success of the scheme require that the aspirations which young doctors have at the commencement of general professional training should be based not only on their wishes but also on their abilities and on the future demands likely to be made on the profession in the

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* RUE, R., *Lancet*, 1967, i, 1267.

† Ministry of Health E.C.L. 27/66 (E.C.N. 544); Scottish Home and Health Department E.C.S. (Medical) Circular 9/1966.

various branches of medicine. Only thus will their applications for general professional training appointments be harmonised with the vacancies likely to be made available by employing authorities in the light of a realistic appraisal of future needs. The Health Departments are now able to indicate the prospects of vacancies in Consultant posts and in general practice some years ahead. Information about expected vacancies and prospects in all career grades for doctors in the National Health Service in Britain as a whole should be made widely available for the benefit of all who are concerned with the provision of advice or postgraduate training. Even so, we have no doubt that some of the more popular specialties will be over-subscribed; there will be a need for some systematic form of selection, on a national basis, for training in these specialties. This selection should be made as early as possible, and certainly no later than the end of the first year of general professional training, so that those thought most suitable could proceed uninterruptedly with their training and others could change, without great difficulty and waste of effort, to training for a more appropriate specialty.

ASSESSMENT OF GENERAL PROFESSIONAL TRAINING

THE PRESENT ARRANGEMENTS

87. At present the trainee's performance in the earlier years of postgraduate training in hospital is assessed very largely by examinations organised by the professional medical bodies for the formal purpose of selecting doctors for admission to the main grade of membership of the body concerned (by tradition known as the Fellowship in the case of the surgical colleges). These examinations vary widely in their design and intended significance. Those of the older-established bodies are designed primarily as a test of potential ability, aimed at selecting the doctors best suited to become Consultants in due course rather than assessing what the candidates have already achieved in postgraduate training. Only those who attain a very high standard in the examinations are given any recognition. There is a high failure rate (see Appendix 4); many of the successful candidates trained in this country have attempted the examination more than once.

88. Membership of the Royal College of Physicians of London seems usually necessary for a medical Registrar appointment at a London teaching hospital, but is held by very few candidates for such appointments at provincial teaching hospitals. The Membership examination may be attempted eighteen months after graduation, but a recent analysis* shows that the modal interval for British candidates between graduation and passing this examination is five years; Oxford, Cambridge and London graduates tend to pass the examination more quickly than graduates of other universities. The first part, designed to exclude unsuitable candidates from the overcrowded practical examination facilities, consists of multiple-choice questions requiring a factual knowledge of the whole field of medicine in its widest sense. Successful candidates proceed to the second part, which is essentially clinical and is arranged so as to allow candidates whose interests lie in general medicine to achieve the Membership at this stage if they reach a high enough standard;

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* WILSON, G. M., *British Journal of Medical Education*, 1967, I, 103–107.

others go on to a third part in which those who wish to specialise in psychiatry or paediatrics may do so. The examination for Membership of the Royal College of Physicians of Edinburgh may not be attempted until three years after graduation; again there is a preliminary test to cut down the numbers going on to the clinical examination. The arrangements for the Membership examination in medicine of the Royal College of Physicians and Surgeons of Glasgow are now very similar.

89. The examinations for the Fellowship of the Royal Colleges of Surgeons of England and Edinburgh and for the Fellowship in Surgery of the Royal College of Physicians and Surgeons of Glasgow are all essentially of the same kind, consisting of Primary examinations in anatomy, applied physiology and pathology, and Final (clinical) examinations; all the surgical colleges require candidates to have had certain hospital experience, which means that the final examination cannot be taken until three or four years after graduation. In fact, the modal interval for British candidates between graduation and success in the Fellowship examination of the Royal College of Surgeons of England seems to be about six years.* The relevance of some parts of the examination to surgical training has been questioned by many of our witnesses; for the Primary examination there seems to be a great deal of cramming of material which is quickly forgotten.

90. Membership of the Royal College of Obstetricians and Gynaecologists at present requires the presentation of reports of cases studied during training and the passing of a single examination, which is taken at the end of the Registrar period. The results of recent examinations (Appendix 4, Table 2(f)) show that two-thirds of British candidates were successful at the first try. The recently instituted Membership examination of the College of Pathologists is in two parts: the first, exemption from which may be given by virtue of published research, is taken at the end of the Registrar period, and the second towards the end of the Senior Registrar period. A definite pattern of pass rates has not yet been established but in both the Primary and Final examinations held from 1964 to 1966 over half of the candidates who had received their undergraduate education and postgraduate training in Great Britain passed at the first attempt (see Appendix 4, Table 2(g)).

91. Even the newer colleges' higher examinations are not related as closely as they should be to the present arrangements for postgraduate training in British hospitals and even well-prepared candidates often fail. We found that none of the colleges had information readily available about the pass-rates of British graduates (see para. 100).

92. In addition to their inappropriate timing and nature, the present assessment arrangements are uncoordinated. The English and Scottish Royal Colleges of Physicians and Surgeons have in recent years taken some steps towards reciprocal recognition of their Primary examinations, but in our view they have not gone as far or as fast as they should. The lack of complete reciprocity between the English and Scottish colleges imposes a highly undesirable rigidity on hospital appointments in Britain. Some English regional hospital boards have declared that qualifications of the English and

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* WILSON, G. M., op. cit.

Scottish colleges are equally acceptable, but in practice a candidate with an English higher diploma is likely to be preferred in England, though the converse does not hold. As a result Scottish graduates (they constitute at present about a quarter of the British total and many of them must leave Scotland to secure hospital appointments) often find that they must spend time and money seeking the qualification of an English as well as of a Scottish college.

NEW PROPOSALS FOR ASSESSMENT

93. One of the principles which we firmly hold is that in the assessment of general professional training there is no place for a single major " pass or fail " examination. Trainees should be assessed on a progressive basis throughout the three-year period, so as to relate the assessment closely to the trainee's particular experiences, to avoid some of the unreliability inherent in a once-for-all review covering the whole of the training, and to provide a basis for a reappraisal of progress and plans at intervals during the training period. Some form of general check should therefore, we think, take place at intervals—perhaps at the end of each year. As we have said in paragraph 86, some form of selection may in any case be needed in the first year in order to decide which trainees may be allowed to continue training in the more popular specialties. The final assessment should include a review of the interim assessments. Provision should also be made for full account to be taken of any special experience the trainee may have had, e.g. in overseas service or in research. The trainee might himself offer this for consideration. If, as we hope, the early postgraduate phase ceases to be dominated by preparation for formal examinations, many more trainees than at present should be able to take part in research.

94. The assessment of general professional training must to some extent be based on reports by supervisors and the chiefs of units in which the trainee has been working. The reports should be at least partly in a standard form to ensure proper coverage of important questions. Supervisors might be required to give an account of the training they have provided as well as of the progress of the trainee. Reports from different supervisors, however, would not always be comparable, particularly where some or all of a candidate's training had been done overseas. Some measure of objectivity will need to be introduced by using standard tests of knowledge and skill. External assessors might be employed to visit borderline trainees and check their supervisors' reports. We do not think, however, that we need or should go into detail as to the methods to be used in assessment; we hope that as experience of the new form of assessment is gained, the methods used will be developed and improved. Examinations should be seen as only one, and not necessarily the most important, element in the assessment process and the results of examinations should always be considered in relation to a progressive assessment of the trainee's performance. The administrative aspects of the arrangements for the assessment of general professional training are discussed later (see paras. 175–194).

95. When a general assessment of the trainee's performance and potentiality indicates that he has satisfactorily completed his general professional training, he should be given a certificate to this effect; those who have done exceptionally well in examinations or have shown outstanding ability in other

respects should get special credit, which should be noted in the certificate. We expect that as all the candidates will have gone through a planned series of training appointments in posts approved for the purpose and will have been progressively assessed throughout, a very high proportion will receive the certificate after three years' general professional training.

96. Any candidate not judged satisfactory at the end of three years should receive a report explaining his deficiencies and offering advice on further training; if the candidate wished to continue general professional training in the same specialty, arrangements should be made for him to have another year's training in appropriate approved posts and he should be given another two chances of assessment during this period. If he wished to undertake general professional training in another specialty he should have access to advice and information as to the additional training that would be necessary.

97. When they had satisfactorily completed their general professional training, trainees would be eligible to proceed to appointments in which they would complete their professional training; doctors who had come to this country from overseas for general professional training should find the certificate of value on return to their own countries; British doctors intending to make a career in the hospital service would be eligible to apply for appointment as Junior Specialists (see paras. 101–112) and those aiming at general practice would apply for Assistant Principal appointments (see para. 121).

98. The certificate awarded on satisfactory completion of general professional training will have, in our view, an important part to play with regard to membership of the professional organisations. The established wisdom and experience of the professional colleges should continue to be fully used in assessing the progress of the trainee specialist, and we think that the satisfactory completion of general professional training should be marked by the trainee's acceptance into the main grade of membership of the appropriate college or equivalent professional body. We should like to see the certificate accepted in itself as evidence of eligibility for membership of the appropriate college; such membership should normally be regarded as a routine next step, at least for doctors resident in Britain. We have every reason to believe that the professional bodies will find themselves able to cooperate effectively in an assessment scheme on the lines we have proposed and we hope that no substantive distinction will exist between the certification of general professional training and the achievement of membership in a professional body. Many of the professional bodies concerned will obviously need to recast their organisational structure to some extent if the recommended object is to be achieved. We hope the surgical colleges will adopt the same nomenclature as the others and reserve the title of " Member " for those who have satisfactorily completed general professional training for surgery, with the Fellowship implying a further advance in status within the specialty at a later stage (see para. 111). This change will raise transitional problems but will be an important step in the rationalisation of British higher professional qualifications and will make them more readily comprehensible to doctors abroad and to laymen everywhere.

99. Furthermore, we think that the Royal Colleges of Physicians and the Royal Colleges of Surgeons in England and Scotland should consult together

as to the best means of achieving reciprocity of membership for physicians and surgeons respectively in the immediate future. Complete reciprocity will not, we think, be attainable without a common assessment procedure, including any formal examinations required, but would be brought closer if the abbreviation for membership accepted for common use did not specify the geographical location of the particular professional body to which the holder belonged.

100. We hope that in future the professional medical bodies will give much more attention than hitherto to the relationship between the training of candidates and success in the professional bodies' examinations, and that information about performance in examinations, at least to the extent which we include in Appendix 4, will be made generally available.

FURTHER PROFESSIONAL TRAINING

101. The three-year period of general professional training which we have proposed in paras. 74–86 above would be rather broad in its aims and nature: although it would be directed towards the requirements of particular specialties there might well be a possibility that a given series of general professional training appointments would be accepted as suitable for more than one specialty (including general practice), so that a change of career intention could be made without difficulty even at the end of general professional training. On satisfactory completion of his general professional training, however, the young doctor's work and interests must be channelled into a narrower field; he would then be expected to commit himself firmly by seeking an appointment providing further professional training, varying in length according to the field he had chosen, in the course of which he would reach the point at which he would be judged competent to exercise a substantial measure of clinical judgment in his specialty without supervision. As will be seen later when we consider the training required for certain particular fields, our proposals above for general professional training can be read with equal applicability irrespective of the field of practice concerned. Our thinking about the next stage of training, however, is more specifically in terms of hospital practice; we offer later some comments on its applicability to other fields, such as general practice.

A NEW HOSPITAL STAFFING STRUCTURE

102. Professional training for the hospital specialties is inevitably bound up with the hospital staffing structure. We have therefore given very careful consideration to the latter, and particularly to the opportunities it offers for a doctor to make a career in his chosen specialty. Until recently only the Consultant grade was acknowledged as a proper aiming-point for the young doctor training for a hospital career. The Medical Assistant grade was introduced some years ago in recognition that the hospital service needed in permanent responsible positions, and could offer adequate careers to, many more doctors than could expect to become Consultants; and also in recognition that hospital posts which did not offer satisfactory training should not be filled on a temporary basis by doctors nominally in training. For reasons we discussed briefly in Chapter 2 the Medical Assistant grade has not become

popular; we think it will be superseded with advantage by a new grade (see para. 48) which for convenience we shall call the " Hospital Specialist " grade.* We envisage that the doctor who has successfully completed his professional training in a hospital specialty will make his career as a Hospital Specialist or, if he shows high ability, as a Consultant.

103. We recommend, therefore, that on completion of general professional training all doctors seeking a career in the hospital service should enter a single career grade of Junior Specialist. When they had had the prescribed experience as a Junior Specialist they would be eligible for vocational registration (see paras. 155–162) and could expect promotion to Specialist, in which capacity they would exercise a substantial degree of independent clinical judgment. The registered Specialist in the hospital service would, like all other hospital doctors, be a member of a team, holding a gradually increasing personal responsibility but looking to a Consultant for guidance and help in unusually difficult cases. Promotion to the Consultant grade would be based on demonstrated ability.

104. We expect that a good proportion of Junior Specialists and Specialists will be part-time; the grade should attract many women who, because of family commitments, are not able to give full-time service to medicine but have been able to complete their general professional training, perhaps over an extended period (see para. 82). The Specialist grade should also offer a means of providing part-time hospital appointments for suitably trained doctors whose main interests lie in other branches of medicine, and especially for general practitioners.

ADVANCED TRAINING IN INTENSIVE TRAINING POSTS

105. Ideally, from some points of view, all Junior Specialist posts should offer equally good facilities for intensive training, so that a firm decision on the trainee's suitability for an early Consultant appointment could be deferred until he had had the fullest opportunity to show his capacity. This would inevitably, however, raise expectations which could not possibly be fulfilled. The strict limitation which the Health Departments have maintained over the number of Senior Registrar posts, since the publication of the Platt Report, has avoided the frustration previously experienced by many capable doctors who found themselves unable to obtain Consultant appointments after a reasonable period of service as Senior Registrars; we do not wish such a situation to arise again. In any case we think that posts of " Senior Registrar " quality could not be made available in unlimited number; we accept that there must be some differentiation among hospital doctors on completion of their general professional training.

106. All Junior Specialists would receive further training but on the basis of their performance in their general professional training certain Junior Specialists would, on entering the grade, be selected for appointment to intensive training posts of limited tenure (in effect, " Senior Registrar " posts) which would be expected to bring them, after a relatively short period of service first as Junior Specialist and then as Specialist (see para. 103), to the

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* For convenience we refer to this grade in general terms; we expect that individuals would be described specifically as "Medical Specialist", "Surgical Specialist", "Paediatric Specialist," and so on.

point where they might reasonably be considered for Consultant appointments. Appointments to intensive training posts would necessarily be of limited tenure, so as to ensure that they were not blocked for long periods by doctors unable to obtain early Consultant appointments; if a doctor holding an intensive training post had not obtained a Consultant appointment within a specified period (see para. 109) he should be required to move to another post in the Specialist grade.

107. No Specialist should be debarred, either by inability to obtain an intensive training post or by having to leave such a post without reaching Consultant status, from competing later for a Consultant appointment if his experience and the development of his capabilities warranted his doing so. When the number of intensive training posts is determined, an allowance should be made for a significant number of Consultant posts to be filled from Specialist posts other than intensive training posts, as well as by doctors who had acquired suitable training and experience overseas or in academic work. Overseas doctors should be accepted for training in the Junior Specialist grade, in intensive training posts or other posts, provided they have already had a general professional training equivalent to that which British doctors will have had. A certain number of intensive training posts, over and above those needed to fill Consultant posts in Britain, should be set aside for them.

108. We expect that there will be keen competition for intensive training posts. Appointments committees should give very great weight to the results of the assessment made at the end of the candidates' general professional training, whether or not that training had been done at "teaching" or "non-teaching" hospitals.

109. The essential purpose of the intensive training post would be to offer a channel of accelerated promotion for the most capable trainees; the standard of training provided in these posts must therefore be very high. The period spent in intensive training posts would vary according to specialty: we expect that it would generally be between two and four years, but in some very highly developed specialties a longer period might be needed. The present Senior Registrar training schemes have been improved as the result of the establishment of advisory committees jointly by universities and hospital authorities, but there is still a good deal to be done, particularly in providing a variety of experience and opportunities for research. At present few Senior Registrars get any real opportunity to carry out clinical research, as is shown by the fact that few obtain a higher degree in the course of their training. This is a serious defect in the education of those who will eventually carry the most responsible and influential posts in medicine and steps should be taken to remedy it. We hope that a substantial proportion of those selected for intensive training posts will obtain a higher degree in the course of their training.

110. Rotation schemes, which already work well in a number of regions under the supervision of active Senior Registrar Advisory Committees, should be introduced in all regions and should wherever possible include service in both university teaching hospitals and district hospitals; if participation in a rotation scheme involves moving house, accommodation should be provided by the hospital authority. There should however be some flexibility in the

arrangements for rotation schemes in order to meet special difficulties caused by family circumstances or engagement in research. Because of the intensive nature of the training that should be given in these posts, the holders should not be over-burdened with routine service work, though this does not mean that they should be observers only.

111. We do not think any particular pattern need be prescribed for the assessment of the trainee's performance during advanced training. We expect that at some point during this period he would become eligible for inclusion in the appropriate vocational register (see paras. 155–162) and acquire full Specialist status. The final criterion of success in this phase of training would be appointment to a Consultant post, but professional bodies may think that, just as doctors who had satisfactorily completed their general professional training should be eligible for membership of the appropriate professional body (see para. 98), so those who have satisfactorily completed advanced training or reached an equivalent standard should normally be eligible for a more advanced status in their college.

TRAINING IN OTHER HOSPITAL SPECIALIST POSTS

112. We do not expect any doctor to be appointed to the Junior Specialist grade who has not satisfactorily completed the normal three years' general professional training. The staffing of the Junior Specialist grade should be such that the service load allowed Junior Specialists to have a proper training. Those who are not in intensive training posts (see paras. 105–110 above) should be given appropriate supervision and further vocational training of a nature generally similar to, but less demanding than, that offered in such posts; they should have time to supplement their growing experience by taking advantage of the general training activities in their immediate environment and should, if they show interest and aptitude, have opportunity for research. We hope that some Specialists, even though they have not held intensive training posts, will achieve higher university degrees which will stand in their favour when they seek promotion to the Consultant grade. When his need for professional training has been met, a Specialist—in common with all other doctors in career grades—should have opportunities for continuing education throughout his working life (see paras. 163–170).

PROFESSIONAL TRAINING IN PARTICULAR FIELDS

113. We do not propose to discuss in detail how the proposals we have made for general professional training and for further professional training might be applied in all specialties and branch specialties but we shall comment at some length on the relationship of these proposals to general practice, psychiatry and community medicine, and more briefly on their relationship to pathology, radiology and anaesthetics; we think there are at present special needs for improvement of postgraduate training in these fields. We also discuss postgraduate training for local authority clinical services, because the future organisation of these services and its implications for training are not yet clear. We provide in Appendix 5 examples of appointments that might be suitable for training in the fields we have mentioned. Other specialties, including ophthalmology and venereology, which we shall not discuss in

detail, suffer from difficulties of recruitment which would, we think, be considerably eased by improved postgraduate training arrangements on the general lines we have proposed. General professional training in ophthalmology and venereology could be on lines broadly similar to those which we propose in Appendix 5 for general medicine, general surgery and obstetrics and gynaecology: the first year would be spent in a general clinical subject or subjects and the second in the specialty concerned; the third year might, at the trainee's choice, include a further six-month appointment in the specialty or in appropriate research, and a six-month appointment in a related subject.

GENERAL PRACTICE

114. As we have explained in Chapter 2, we think that primary medical services in this country will, for the foreseeable future, continue to be based on general practice but in a form very different from that of the traditional single-handed practice or small partnership. We believe that general practice will be a satisfying and challenging specialty. We see in the future a general practitioner providing care for the families and individuals in the local community, working with a group of colleagues (each, probably, with a personal interest in a particular specialty) aided by proper diagnostic services, ancillary staff and efficient practice organisation; and cooperating closely with other agencies. We see him, moreover, playing a responsible part in the hospital and other health services, and recognised as a specialist in his own right by virtue of his unique and essential contribution to medical care. This vision will become a reality only if general practice, like hospital practice, is based on organized professional training of the kind we have proposed in paragraphs 74–86.

115. Traditionally, the only preparation universally required as a condition of entry to general practice has been the statutory basic medical education—the undergraduate course and, in recent years, a year of approved hospital experience under supervision. The evidence we have received, as well as the literature of the past twenty years, shows clearly that this is no longer thought sufficient to produce a " finished doctor " in any field of medicine. In fact, there has already been a strong movement towards a more adequate vocational training for general practice. In recent years many doctors have spent at least one or two years more than the statutory minimum in hospital posts before seeking appointments outside* (some, of course, have remained in hospital work in the hope of becoming Senior Registrars, rather than in conscious preparation for a career in general practice). There have been a number of attempts to put training for general practice on a more systematic basis.

116. The national Trainee General Practitioner Scheme was introduced in 1948 following a recommendation of a Committee under the chairmanship of Sir Will Spens.† This scheme provides a year of in-service training with a Principal in general practice who has been approved as a trainer, during which time the trainee assistant is a supernumerary member of the trainer's prac-

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* Report of the Joint Working Party on Medical Staffing Structure in the Hospital Service, para. 95. H.M.S.O., 1961.

† Report of the Inter-Departmental Committee on Remuneration of General Practitioners, Cmd. 6810. H.M.S.O., 1946.

tice. The scheme increased in popularity until 1957, when there were nearly 450 trainee assistants in Great Britain; subsequently the numbers taking part have declined and in 1966 only about 150 entered general practice through the scheme. Local schemes providing training both in hospital and in general practice have been developed in some areas, e.g. Birmingham, Bristol, Durham, Inverness, Lancaster and Wessex. Although these local schemes have been well thought out and carefully planned, difficulty has generally been found in attracting trainees to them, even in the relatively small numbers for which arrangements have been made. None of the training schemes has been obligatory or has offered a sufficient positive inducement to compete successfully, in a period of manpower shortage, with the material benefits of early entry into independent practice.

117. Some of our witnesses, while agreeing on the urgent need to introduce adequate universal training for general practice, have suggested that the attractions of general practice are not now strong enough to overcome the deterrent effect of a requirement for additional training, and that recruitment would be reduced unless specific positive incentives (presumably of a financial kind) were introduced. We do not think, however, that a universal requirement for proper training will deter good doctors from entering general practice. In fact we think proper training will be an attraction in itself, but unless it is made compulsory the few who put quick rewards before professional pride will have a financial advantage that will, we think, prevent any general advance in standards.

118. In our view the appropriate professional training for general practice could not possibly be provided, as some witnesses have suggested, simply by twelve months in hospital appointments (in addition to the compulsory pre-registration year) followed by a short period as an assistant in general practice before becoming a Principal. In recent years much thought has been given by the Royal College of General Practitioners, the British Medical Association and others to the idea of a much more comprehensive scheme of professional training for general practice and we have been impressed by the scheme for comprehensive professional training put to us by the Royal College (see Appendix 6) which proposes, after the intern year, four years' further training two of which would be in appropriate hospital appointments and two in appropriate training posts in general practice. For reasons which we make clear in the following paragraphs, our recommendations on professional training for general practice differ in some respects, though not we think in essence, from the College's proposals.

119. Professional training in general practice should, we think, aim at producing a first-rate clinician in the field of internal medicine, with a good knowledge of preventive medicine and with special knowledge of the problems —both clinical and organisational—associated with family doctoring and with the role of general practitioner as " doctor of first contact " in the community. We should like to see, in accordance with our recommendations for other specialties (see para. 75), all would-be general practitioners undertaking a three-year period of general professional training, comprising a series of six-month, or perhaps twelve-month, rotating appointments. One of the compulsory appointments, early in the period, would be spent in general practice, somewhat on the lines of an appointment in the present Trainee General

Practitioner Scheme, but would if possible include some time with the local authority and perhaps also some study of occupational health. A six-month appointment in obstetrics and gynaecology would be highly desirable. The next most important subjects to be included are general medicine, paediatrics and psychiatry. Other subjects for which training appointments should be arranged where possible are anaesthetics (including general dental anaesthesia*), dermatology, geriatrics, ophthalmology, otorhinolaryngology and physical medicine; concurrent experience of two or three of these subjects could often be provided in a single training period. A sound and up-to-date knowledge of therapeutics is essential for all general practitioners; great emphasis should be placed on training in therapeutics during general professional training and opportunities should be provided for attendance at lectures and courses in clinical pharmacology. Examples of series of appointments suitable, in our view, for general professional training in this field are given in Appendix 5(d). On satisfactory completion of this general professional training, signified by the award of a certificate based on progressive assessment of the trainee's performance (see para. 95), trainees would, we hope, be considered eligible for membership of the Royal College of General Practitioners.

120. An essential feature of the Royal College of General Practitioners' scheme is that both trainers and trainees should receive fair remuneration. During general professional training the would-be general practitioner, whether in hospital or elsewhere, should in our view be graded as Registrar and be paid by the hospital service at the same rate as those being trained for hospital specialties (see para. 85). The trainers needed for the phase of general professional training spent in general practice itself would have to be highly selected; training responsibilities should be remunerated at a level high enough to attract sufficient general practitioner Principals of the quality required, and to enable them to reduce their lists of patients so as to provide time for their training duties. Health centres should be used for training as much as possible in this context.

121. After the period of general professional training the young doctor should have two years' further professional training as an Assistant Principal in general practice; during this time he would be responsible for the treatment of patients to a Principal in the practice. We do not think that the posts or supervisors required in this period of further professional training could be or need be as highly selected as those appropriate for the trainee during his general professional training. The young doctor would still need guidance and advice, but would now have sufficient experience to carry a considerable amount of clinical responsibility. During this period there should be ample opportunities for further education outside the practice, including attendance at courses offered by university departments and professional organisations, and for suitable attachments to hospitals, local authorities and other general practices where possible. We should particularly like to mention the importance for the young general practitioner of instruction in the good administration of general practice; introductory courses on this subject, or extended

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* See Dental Anaesthesia, Report of a Joint Sub-Committee of the Central Health Services Council, Standing Medical and Dental Advisory Committees, pp. 19–20. H.M.S.O., 1967.

courses on the lines of those which have been held in Canterbury and in Wessex, would be very useful. We recommend that the second year of further professional training be spent in a practice in a different environment from that of the first. After satisfactory completion of his professional training the doctor should be competent to exercise independent clinical judgment as, in effect, a " Specialist " in general practice. He should therefore be eligible for inclusion in the vocational register for general practitioners (see paras. 155–162) and for appointment as a Principal in general practice in the National Health Service.

122. We have not suggested any specific provision for advanced training for general practitioners. There is at present no well-defined occupational status towards which such training could be aimed. We expect that our proposals, if implemented, will considerably raise the status of general practice, but we cannot yet predict the directions in which practitioners of outstanding ability might benefit from advanced training.

123. We recognise the problems that would be involved in the introduction of a scheme such as we have recommended. There would be great difficulty in finding in the near future enough suitable training posts in general practice and in hospitals to enable all prospective entrants to general practice to receive the kind of training envisaged. Manpower in general practice would of course be affected for a time by the introduction of a compulsory period of professional training lasting a number of years, but already about two-thirds of the doctors who become general practitioner Principals are over thirty years old* when they do so; since about the same proportion of doctors complete their pre-registration year by the age of 26, we think that already most of the doctors who become Principals have had since registration some experience either in junior hospital posts or as assistants in general practice. Nevertheless the introduction of a substantial training period for all would reduce the number of admissions as Principals to general practice until the first cycle of training was completed. We cannot easily estimate the extent of this temporary reduction, because we do not know how many would enter general practice if present arrangements remained unchanged; we have no doubt, however, that without a comprehensive scheme of professional training there would also be a fall in the number of doctors aspiring to become Principals in general practice, and there would be no compensating rise in standards of medicine and morale, or any prospect of making good the deficit as time went by. We therefore recommend that the general professional training required for prospective general practitioners after the intern year should, like that for other specialties, be of three years' duration and that two years' further professional training and experience should be required before vocational registration in this field. We believe that the introduction of a training scheme for general practice on the lines we have proposed would greatly enhance the attractiveness of general practice as a career, and would increase the proportion of young medical graduates who decided to seek a career in this field.

PSYCHIATRY

124. In 1944 the Goodenough Committee deplored the low standard of

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* Annual Report of the Ministry of Health for the Year 1966, Cmnd. 3326, Table 7, p. 83. H.M.S.O., 1967.

existing diplomas in psychological medicine.* The Committee advocated a much more thorough preparation for future specialists in psychiatry and, while accepting that training would necessarily go on in a number of centres, recommended that it should be given at a much higher standard of thoroughness in two national teaching centres. This recommendation has been only partly implemented. In 1968 the picture of psychiatric training, although not as black as at the time of the Goodenough Report, still leaves a great deal to be desired. The two biggest changes have been the development of the teaching programme of the University of London Institute of Psychiatry at the Maudsley Hospital and the creation of small academic departments of psychiatry in all the British provincial and in some of the London medical schools.

125. In 1964–65 the Institute of Psychiatry was giving instruction to 174 psychiatrists in training, some of whom were preparing for the examination for the University of London Diploma in Psychological Medicine (now replaced by the M.Phil. degree); many of the remainder were preparing for the examination for the Diploma in Psychological Medicine offered by the Conjoint Board. Outside London, postgraduate teaching has been organised in a number of university departments, several of which have their own examination for the Diploma in Psychological Medicine. Other university departments collaborate with the mental hospitals of their respective regional hospital boards to provide some instruction in psychiatry for Registrars who are preparing to sit the examination for the Conjoint Board's Diploma. The number of students who take university diplomas in this subject elsewhere than in London is extremely small, amounting only to twos and threes in each centre except at Edinburgh, where there is now a two-year course with about fifteen students in each year. The standard requirement for the Diploma in Psychological Medicine is now two years' experience in recognised psychiatric hospitals, together with a stipulated amount of experience in general medicine and neurology. This still falls well short, both in duration and content, of the minimum experience judged appropriate for the training of psychiatrists by a World Health Organisation Expert Committee in a recent report on this subject.† A recent survey carried out by the Royal Medico-Psychological Association revealed that between a quarter and a half of the hospitals nominally recognised as suitable to provide training for the Diploma of the Conjoint Board had not in fact met the relatively modest requirements for such recognition: they fell short in such matters as library provision, regular teaching sessions and access to child psychiatry.

126. During the last twenty years the Institute of Psychiatry has played a most important part in training future teachers and research workers and will undoubtedly continue to do so. We think, however, that the interests of psychiatry would best be served not by the development of more such institutes but rather by concentration on developing, in line with the general proposals set out elsewhere in this chapter, national and regional programmes of specialty training in which university departments of psychiatry, the hospital service and the psychiatrists' own professional association will collaborate. An important aspect of this line of development (as was emphasised in the

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* Report, pp. 186–188.

† W.H.O. Special Report Series No. 252, 1963.

recent report of a Working Party on Vocational Training for the Psychiatric Services*) will be the pressure for an improvement of teaching facilities and activities in every psychiatric hospital, and not merely in the established teaching centres. The programme can be made effective, however, only by the appointment of senior psychiatrists charged with the responsibility of organising and participating in more intensive teaching for junior psychiatric staff. The departments of psychiatry in the great majority of medical schools are at present quite inadequately staffed in relation to their current responsibilities† (see para. 263). These departments must take the lead in ensuring a high academic standard of instruction for psychiatrists in training; the psychiatrists' professional association and the hospital service will be responsible for ensuring that the necessary material facilities, such as hospital libraries and clinical experience, are made available to all trainees. The Health Departments' recent circulars on professional and study leave for medical and dental staff in the hospital service‡ clearly state that junior staff should be permitted and encouraged to take time off for approved courses of postgraduate training, the fees for which will be paid by their employers.

127. The Royal Medico-Psychological Association, which aspires to become a College of Psychiatrists, has appointed a working party to make recommendations about a higher qualification which, the Association hopes, would be taken by all future candidates for responsible positions in psychiatry. We think the traditional pattern of formal teaching for trainee psychiatrists should now be reviewed, so as to ensure that they have appropriate supervised clinical experience during the three years' general professional training which we recommend (see paras. 74–86): changes in the scope of psychiatric practice compel corresponding changes in the trainees' experience. We understand that the recommendations of the Association's working party could readily be harmonised with our recommendations for general professional training.

128. Contemporary psychiatry is no longer exclusively related to neurology and neuro-pathology: emphasis could more appropriately be placed on a whole range of physical illnesses (of the respiratory, cardio-vascular, alimentary, dermatological and genito-urinary, as well as the central and peripheral nervous systems) and a more thorough study of learning theory, psychodynamics and contemporary sociology could be expected than has hitherto been the case. Because of changes in psychiatric practice, every psychiatrist should be familiar with the pharmacology of psychotropic drugs, with the psychotherapeutic management of the common neuroses, psychosomatic disorders and personality disorders, and with the conduct of community psychiatry.

129. During their three years' general professional training, trainees should be permitted to devote two half-days a week to attendance at a formal course

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* Vocational Training in Medicine. Nuffield Provincial Hospitals Trust, 1967.

† CARSTAIRS, G. M., *et al.* Survey of Undergraduate Psychiatry Teaching in the United Kingdom, 1966–67. *British Journal of Psychiatry* (awaiting publication).

Report of a Working Party on Postgraduate Medical Education within the National Health Service in Scotland. Scottish Postgraduate Medical Association, 1967.

‡ H.M. (67)27 for England and Wales; S.H.M. 29/67 for Scotland.

of instruction, conducted by a university department of psychiatry in collaboration with the regional postgraduate committee and the tutors in the regional psychiatric hospitals. It is highly desirable that future psychiatrists should have an opportunity to encounter a wide range of everyday general morbidity before narrowing their clinical experience to the purely psychiatric field. Individuals vary widely, however, in their level of maturity, in the experience which they acquire as undergraduates and in the clarity of their plans for their ultimate career; consolidation of general medical experience, by spending six months or a year in general medicine (either in hospital or in general practice), should therefore be regarded as optional. All trainees in psychiatry should spend two years in full-time hospital training appointments involving in-patient and out-patient treatment of psychiatric patients: at least a year should be spent in short-stay care and at least six months in long-stay care. These appointments might be in psychiatric hospitals, in psychiatric units in general hospitals or in university professorial units, with the proviso that in general only a psychiatric hospital appointment can give experience in the care of long-stay patients. Wherever the appointment, it should provide opportunities of admitting and managing psychiatric patients under conditions of supervision such as to ensure that this aspect of training is a learning experience. The trainee should receive instruction in interview technique, history-taking, physical and mental examination of the patient, coherent presentation of the clinical phenomena elicited, diagnosis, treatment (both physical and psychotherapeutic), planning for discharge, rehabilitation and job placement, use of social services, consultation with the patient's general practitioner and management of acute psychiatric emergencies. Trainees should have at least one year's part-time experience (at least one session a week) of treating out-patients under supervision; they should have part-time clinical instruction (at least one session a week), with opportunity to see patients but not necessarily to be responsible for their treatment, in neurology and neurosurgery (at least six months), child psychiatry (at least six months) and mental subnormality (at least three months). The three years' training should be completed by one or more other psychiatric appointments, lasting six months each. Examples of possible general professional training programmes in psychiatry, and a list of suitable optional appointments, are given in Appendix 5(e).

130. Although the majority of psychiatrists will continue to be concerned with all branches of psychiatric treatment, there will be a continuing need for some specialised vocational training in child psychiatry, subnormality and psychotherapy. The shortage of psychiatrists with advanced training in these fields is so acute that increased provision for training will have to be made, if already pressing service needs are to be met during the next twenty years. This is particularly true of child psychiatrists, whose contribution to the school health service, to the child welfare agencies and to the treatment of juvenile delinquents is becoming more widely recognised. Each of these sub-specialties requires a prior training of one or two years in general psychiatry, after which the trainee needs another three to four years' training and experience in his chosen sub-specialty. Both child psychiatrists and specialists in subnormality are encouraged to gain some experience in paediatrics; their specialised training includes instruction in modern educational theory and practice. Child psychiatrists are necessarily much involved in dealing with disturbed

family relationships and their repercussions on the developing child: personality development and the sociology and social pathology of the family must take a prominent place in their specialised course of study. Many psychiatrists who are particularly well qualified to contribute to this important aspect of the training of child psychiatrists have undergone formal training in psychoanalysis; more use should be made of their services than has hitherto been the case. As part of their practical experience, trainees in each of these sub-specialties should work with the community and educational agencies which cater for emotionally disturbed and mentally handicapped children.

131. The need for more widespread training in forensic psychiatry has been accentuated by a growing recognition that much juvenile delinquency and adult antisocial behaviour has its roots in disturbances of personality attributable in turn to adverse early experiences. The Home Office has pointed out to us that the courts and the penal system increasingly regard conviction as an opportunity to try to modify such antisocial behaviour patterns, and require the participation of psychiatrists with experience in this special field. Training in forensic psychiatry is essential for the majority of the staff of the Prison Medical Service, and some experience of this type of work is a necessary part of the training of all future Consultant psychiatrists. Students of forensic psychiatry require instruction in the sociological and personal correlates of criminal behaviour, in the law governing criminal responsibility, and in the various ways of dealing with offenders in whom a psychiatric disorder is suspected or demonstrated. Above all, trainee forensic psychiatrists need some first-hand experience in treating criminals. There need not be many who specialise exclusively in forensic work, but there should be at least one psychiatrist in each university centre with advanced training in this subspecialty who can provide teaching and carry out research.

132. Psychotherapy may consist of relatively simple procedures, based on eliciting a very full communication of the patient's anxieties and their immediate occasions; it can also be a highly specialised technique, calling for advanced study and a period of practice as an apprentice. This technique, which most clearly differentiates psychiatric treatment from that given in other branches of medicine, has been comparatively neglected in most British medical schools. Every university department of psychiatry should have one or more members of staff capable of giving advanced training in this field. Training in psychotherapy can be of value not only to psychiatrists but also to those general practitioners and physicians who are able to recognise emotional disturbances in some of their patients and are moved to include some expertise in psychotherapy among their skills.

COMMUNITY MEDICINE

133. " Community medicine " is a term currently used with different connotations. In the sense in which we use the term, community medicine is the specialty practised by epidemiologists and by administrators of medical services—e.g. medical officers of local authorities, central health or other government departments, hospital boards or industry—and by the staffs of the corresponding academic departments. It is concerned not with the treatment of individual patients but with the broad questions of health and

disease in, for example, particular geographical and occupational sections of the community and in the community at large. It embraces many activities and interests and includes doctors employed in different spheres, partly because the health services have developed in this country under several different authorities. It makes use of a variety of techniques and procedures which are not necessarily exclusive to it. Nevertheless the functions of all doctors working in this field are closely related; there are no intrinsic differences in their requirements for basic training or in the techniques they employ. Over the years a variety of names has been used to describe the traditional and important responsibilities (or certain facets of them) which we include in our concept of community medicine: among familiar terms in use are public health, preventive medicine and social medicine; confusion has arisen because they are often treated as synonymous.

134. In community medicine, as we define it above, the doctor has no monopoly of responsibility or of contribution: many other people's skills are also required. Indeed in some fields, such as environmental control—the pioneering activity which first brought organised community health services into being—day-to-day responsibility has largely passed out of medical hands. Nevertheless, medical leadership in community medicine is as important as ever. Specialist training and practice in this branch of medicine are therefore essential.

135. Recruitment of doctors to community medicine is at present unsatisfactory: most young doctors seek careers in clinical medicine. The undergraduate medical course directs students' interests almost entirely to the care of individual patients, but the inclusion of more teaching in the behavioural sciences and in community medicine itself (see Chapter 4) may improve the situation. Relatively few doctors will be needed each year for postgraduate training in community medicine but those attracted must be of high quality. If this object is to be achieved the interest of young doctors must be aroused, a proper system of training must be introduced and trainees should see in community medicine prospects clearly as good as those in other specialties.

136. We think young doctors should not commit themselves to a career in community medicine too soon after they have completed their basic medical education. Their immediate interest is usually the acquisition of clinical experience; the entrant to community medicine should be well versed in clinical medicine, have had opportunities to see something of the social factors in disease in both hospital and general practice and be sufficiently mature to make a wise choice of specialty. Some experience of other subjects, such as psychiatry and paediatrics, would also be useful.

137. The main elements in the professional education and training of the specialist in community medicine are already well recognised. Epidemiology, statistics, medical sociology, operational research and the organisation of medical care and administration (or management) are the core subjects: their assimilation requires academic instruction and preferably, even for doctors who expect to spend most of their working lives in professional practice, opportunity for some research experience. These academic elements should, along with planned experience in training posts, provide insight into the medical problems of the community and the health services as a whole,

although they may be weighted in one or other direction according to the probable future field of work of the trainee. The period of experience in approved clinical, administrative or academic posts during general professional training should, following our general recommendations, be three years; examples of suitable appointments are given in Appendix 5(f). During this period the trainee should become broadly familiar with the administrative workings and community objectives of the different parts of the health service.

138. In community medicine there is a great need for a professional body which can bring together all the interests, academic and service, and which has the support and strength to undertake the assessment needed during and at the end of general professional training. Until such a body is established the functions of assessment and supervision of training will have to be the responsibility of the universities which have departments of community medicine.

139. If vocational registration is introduced, as we recommend in paragraphs 155–162, for all clinical specialties (including general practice) we suggest that the arrangements should cover also doctors engaged in community medicine. In our view a doctor should have two years of further training and experience in community medicine, after general professional training, before vocational registration in this field. The main purpose of this further training would be to give the trainee the necessary analytical and investigative skills to enable him to perform his tasks of medical care evaluation, planning and organisation. During this period he should have an opportunity to participate in current studies of medical care, and this is probably the best time also for him to pursue the appropriate academic courses, e.g. that for the Diploma in Public Health, or other similar experience.

140. At present, almost all formal postgraduate courses in community medicine lead to the Diploma in Public Health. This qualification is registrable by the General Medical Council and, by statute, only doctors holding it may be appointed Medical Officers of Health. The Council effectively determines the content of the Diploma syllabus and has recently published new recommendations as to courses of study and examinations. These recommendations meet present-day needs admirably and aim to make the Diploma course a valuable experience not only for local government medical officers but for any doctor in community medicine.

141. There have been good reasons hitherto for insisting on the inclusion of an academic year of full-time study, or its equivalent, in the training required for community medicine; these reasons may not disappear even when undergraduate medical education provides a better grounding in the subject. In the future, however, it may be possible to arrange a training scheme for community medicine with interrupted periods of full-time academic study, on lines analogous to the training we have recommended for clinical specialties. Meantime, there is urgent need for the employing authorities to accept responsibility for the remuneration of trainees and to seek suitable advice in the development of full programmes of training.

142. Doctors who wish to specialise in occupational medicine should have a full course of training for community medicine. Occupational medicine

would be an elective subject in the academic course and the planned experience would be appropriately adapted. In addition, better postgraduate training facilities should be available for the large number of general practitioners engaged in part-time occupational health posts. Under present conditions most of these practitioners have no formal training in occupational medicine; suitable courses should therefore be organised not only by academic departments of occupational medicine but also by departments of community medicine which have teachers with appropriate special qualifications and experience. These courses, designed both for training and for refresher purposes, could be short intensive ones or on the day-release principle. There would be great advantage in a longer and more adequate whole-time course of instruction, with suitable practical experience, for general practitioners who could be released from practice for a sufficient period.

143. Most of the university departments of community medicine with full-time staff have been established since the Report of the Goodenough Committee. The staff of these departments must of course be primarily interested in their own discipline. Nevertheless, links with clinical medicine might be strengthened by some joint appointments. A rising number of clinicians are interested in the epidemiology of one or other disease problem with which they are concerned. Opportunities should therefore be created for interested young clinicians to get special experience in epidemiological research methods. In a multi-professorial department of medicine one of the professors might well have a special interest in the community aspects of medicine.

144. There has been an unfortunate tendency for teachers and research workers in community medicine to pursue their interests separately from the practitioners of this specialty. Stronger links between teaching and practice should be developed which emphasise the common ground in the discipline rather than the diversity of current administrative arrangements. As we have said earlier, we expect a considerable integration in the organisation of health services; changes may well take place fairly soon. The reports of the Royal Commissions on Local Government and of the Committee on Local Authority and Allied Personal Social Services (the Seebohm Committee) are expected shortly [illegible] Health Departments have announced that they are reviewing the structure of the health service in Great Britain. We have noted with approval the recommendation of the Mallaby Committee* that " the recruitment and training of medical practitioners for the management of health services should be reviewed in the wider context of the recruitment of medical practitioners to the administrative staffs of Regional Hospital Boards and to the civil service, and this review might include a common system of training and interchangeability of staff."

LOCAL AUTHORITY CLINICAL SERVICES

145. The two main clinical services in which doctors are employed by loca authorities are Child Health and School Health. The doctors employed in them sometimes combine them to make a full-time job, but some spend part of their time in other branches of medicine (e.g. general practice); some are women whose family responsibilities restrict them to part-time work.

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* Report of the Committee on the Staffing of Local Government, para. 212(b) (iv). H.M.S.O., 1967.

146. We have been told by the Department of Education and Science that the courses leading to the Diplomas in Child Health or Public Health, on which heavy reliance has been placed in the past, are not appropriate to the present-day requirements of doctors engaged in the School Health Service and that possession of one of these Diplomas is not essential for appointment. Doctors who work with educationally subnormal children are required to attend full-time courses, lasting a few weeks, which give particular emphasis on mental subnormality and learning difficulties. The Society of Medical Officers of Health and some universities organise a number of other short courses on specific topics or recent developments.

147. In considering the provision that should be made in the future, we have had to ask ourselves whether the local authority clinical services are likely to continue in their present form. They began because a need was not being satisfactorily met, and although circumstances have changed since their inception we are not convinced that they can yet universally be provided in some other way. We find difficulty, however, in seeing how these services can provide a doctor with an entirely satisfying career; the present situation in which many school doctors see no ill children, and many general practitioners see fewer well children than they should, is basically unsatisfactory.

148. Personal health services, while they continue to be provided by doctors employed by local authorities, will continue to offer opportunities for employment of married women doctors which are, at present, not generally available in other fields of medicine. Doctors engaged in these services should have the opportunity for the specialised training they need in their chosen field of practice, e.g. maternity, infant welfare or school health services, and on a part-time basis if necessary. We think, like the Sheldon Committee,* that these personal health services will in the future be provided increasingly by general practitioners; the health centres of the future will, in our view, include practitioners with a particular interest in the health of the local community at large. Before this becomes possible many general practitioners will need training in certain specialised techniques and we recommend that the six-month training course outlined in the following paragraph should be an optional part of the general professional training for general practice.

149. The Society of Medical Officers of Health, in conjunction with the London School of Hygiene and Tropical Medicine, has since 1964 promoted six-week courses in child development designed primarily for doctors already experienced in child health work. We think that an expanded course on these lines, with contributions from teachers who represent a wide range of disciplines and can deal with principles and practice, should be part of the training of all doctors who intend to enter the Child Health and School Health Services. We expect that such courses, which should be combined with practical experience in the field, would last six months. They should be available in various parts of the country and there should be the possibility of part-time attendance over a longer period. When their contents are being planned, attention should be paid to the subjects listed recently by the Sheldon Committee as essential to the work of any doctor in a Child Welfare Centre.

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* Child Welfare Centres. Report of a Sub-Committee of the Standing Medical Advisory Committee of the Central Health Services Council. H.M.S.O., 1967.

PATHOLOGY

150. We attach great importance to the proper training of future specialists in laboratory medicine, which is contributing extensively to new developments in clinical practice. We have mentioned in paragraph 74 that pathology plays an important part in training for other specialties; the converse is also true and we suggest that prospective specialists in pathology should spend the first year of their general professional training in general hospital clinical work. The second and third years would then be spent in approved laboratories, gaining experience in at least two of the major branches of pathology; an opportunity to take part in research should be available. An example of a programme of general professional training suitable for prospective pathologists is given in Appendix 5(g). The College of Pathologists recently adopted a pattern of training which fits well with our plan for general professional training. An extract from the College's evidence is reproduced in Appendix 7.

ANAESTHETICS

151. In Appendix 5(h) examples are given of appointments which we think would be suitable for general professional training in anaesthetics. The trainee in this field should be required to attend for not less than two half-days a week, lectures, tutorials and demonstrations dealing with the scientific basis of his specialty: posts should therefore be approved for training in anaesthetics only in centres large enough to provide advanced academic teaching. In addition he should be required to participate in the care of surgical patients immediately before and after surgery. Senior anaesthetic staff must be allocated sufficient "out-of-theatre" sessions to contribute to the teaching programme and to participate in pre- and post-operative management. Because properly staffed and equipped departments of anaesthetics are scarce in many countries, great care is necessary in the selection of suitable centres abroad for the secondment of trainees.

RADIOLOGY AND RADIOTHERAPY

152. Both diagnostic radiology and radiotherapy need as wide a background of clinical experience as possible; all doctors wishing to enter these fields should, after the intern year, spend a further period of one year gaining general clinical experience.

153. Those proposing to enter diagnostic radiology must, during general professional training, study physics as applied to radiology and photography and gain a detailed but somewhat specialised knowedge of anatomy; they have a special need for a sound knowledge of morbid anatomy (further studies of anatomy and morbid anatomy should be undertaken during the period of further professional training). Some study of nuclear medicine in respect of scanning techniques is advisable. Appendix 5(i) gives an example of a suitable programme of general professional training in diagnostic radiology, including a list of subjects in which elective appointments should be available. Some trainees should be permitted to spend some time in research during general professional training but usually this would be better left until the period of further professional training.

154. In radiotherapy a thorough understanding of physics as applied to radiotherapy is necessary. This subject should be studied in conjunction with

an appointment in radiotherapy in the period of general professional training; it will continue to be applied throughout further professional training. Radiobiology and the therapeutic aspects of nuclear medicine are also important and the radiotherapist should have some training in diagnostic radiology. Morbid anatomy and haematology are fundamentally important in radiotherapy and there is a wide range of subjects in which elective appointments would be of value; they are listed in the example of a suitable training programme which is given in Appendix 5(i).

VOCATIONAL REGISTRATION

155. No qualifications are required by law for the practice of medicine in this country. The nominal purpose of the statutory Medical Register, kept by the General Medical Council, is to enable patients to distinguish between " qualified " and " unqualified " practitioners, and we have seen no evidence to suggest that any fundamental change in this approach is likely to be demanded in the foreseeable future. For all practical purposes, however, registration is a necessary condition for medical practice and is thus the primary aiming-point of medical education. Admission to the Register requires no more than the medical degree of a university, or the diploma of certain professional bodies, followed by a year's experience in an approved hospital or approved health centre; but for many years registration alone has not been generally regarded in the profession as sufficient qualification for the exercise of independent clinical judgment.

156. Hitherto higher standards could not easily be demanded in general practice, which suffers not only from the paucity, common also to other branches of medicine, of systematic provision for postgraduate professional training but also from a shortage of suitable candidates and the fact that the method of appointing general practitioners in the National Health Service does not encourage the application of standards other than those accepted by the candidate's prospective partners. Nothing which we propose is intended to deny general practitioners the right to choose for themselves those who may be their close colleagues for many years. Our proposals would, however, ensure that the choice was made from adequately qualified candidates.

157. If our proposals for general professional training are accepted they will carry the graduate doctor close to the point where he is competent to exercise a substantial measure of independent clinical judgment in his chosen field. In the traditional hospital-based specialties, this involves rationalising and systematising the provision of experience and instruction already accepted as necessary. In other fields, particularly in general practice, it involves the establishment of new training requirements. In all fields, however, the aim is essentially the same and a definite objective is required. We have recommended (see paras. 93–100) a comprehensive assessment procedure leading to the award of a certificate denoting satisfactory completion of general professional training, and probably to membership of an appropriate professional body. Some further experience, in conjunction with additional training, will probably be needed to allow the aspirant's clinical judgment to develop to the point where he can reasonably be expected to deal competently with any clinical situation normally likely to confront him.

158. Possession of a certificate and evidence of appropriate subsequent experience will not in themselves, however, be a sufficient guarantee to the public, or to others concerned, of the competence of the doctor. Present registration arrangements are a necessary complement to a sound system of undergraduate education and initial experience: they provide an authoritative endorsement of a doctor's primary qualification, and an easily accessible means of identifying those who have acquired it. The time has now come, in our view, for the establishment, on similar lines, of a system of vocational registration as the necessary complement to a proper system of professional training; we recommend that the General Medical Council should be the vocational registration authority. Vocational registration need not introduce undue rigidity into training or into appointment procedures. Unusual experience, or overseas professional training, should be eligible on its merits for consideration by the Council, after consultation with the appropriate college or other professional body. As with the registration of primary qualifications, vocational registration would be informative: it would signify that in the opinion of the profession the trainee had had the training and experience that would normally be expected to make a doctor sufficiently competent to exercise a substantial measure of independent clinical judgment in his chosen field.

159. Vocational registration should cover general practice and community medicine as well as the hospital specialties. Such registration could help to ensure that no doctor became a Principal in general practice in the National Health Service who had not received adequate training, and would achieve this object without either introducing a rigid requirement for one particular form of training or, on the other hand, leaving standards to be decided by individual executive councils. Vocational registration would also inform the public which doctors, whether or not they were in the National Health Service, had been recognised as suitable for the full responsibilities of general practice.

160. Vocational registration should therefore cover every doctor with a substantial measure of independent clinical or administrative responsibility, including general practitioners, hospital specialists and doctors engaged in community medicine. Vocational registration would signify a reasonable minimum of informed competence in a specified field, and should therefore be granted on the basis of general professional training and a specified period of further training and experience. The length of the latter period would be prescribed separately for each specialty, in consultation with the college or other professional body concerned, and would no doubt depend on the complexity of the particular specialty, on the type of training and whether it had been undertaken full-time; as a general rule the period ought not to be less than two years. We are not equating vocational registration with the attainment of Consultant status. A hospital doctor in an intensive training post (see paras. 105–111) would presumably take vocational registration in his stride before he finished his intensive training. The primary criterion of Consultant status would remain, as at present, appointment to a Consultant post. We suggest that all doctors already holding National Health service appointments as hospital Consultants, those Medical Assistants with appropriate training and experience, and also all Principals in general practice,

should automatically be admitted to the appropriate register when vocational registration begins. Thereafter, registration should be normally regarded as a routine feature of the background of applicants for Consultant and Principal posts.

161. Vocational registration should be based primarily on the main specialties (including general practice) currently recognised in this country. In view of the possible entry of the United Kingdom into the Common Market at some time in the future, the demarcation of disciplines should be capable of being related to the twenty specialties at present recognised in the countries of the European Economic Community* (fourteen are recognised in all six of these countries), but initially at least there might be no need for so many separate categories in the British register. In our view the definition of specialties for registration purposes would best be decided by the General Medical Council as the registration authority, on the advice of the appropriate professional bodies, who should also be responsible for advising the Council on the length of experience that should be required after general professional training as a condition of registration in each specialty.

162. In proposing a vocational registration procedure of this kind we must face the likelihood that some candidates will fail to achieve registration. Given a comprehensive and well-administered training scheme there should not be many who will not meet the required standard within a reasonable period after completion of their general professional training. There will inevitably be some doctors, however, who for one reason or another—perhaps because the pattern of their family and working life prevents the completion of their training or because of other personal difficulties—never achieve vocational registration; it must be accepted that the standards of the profession and the interests of the public require that such doctors should be appointed only to posts in which guidance and supervision are available. This condition should not be difficult to meet: there will be many such posts in hospitals, and if the organisation of general practice changes as we have envisaged in Chapter 2, there should be no difficulty in providing suitable posts in this field either. There may well be many women doctors with family responsibilities who find themselves without the opportunity or the inclination to complete general professional training, even over an extended period (see para. 82). Their ineligibility for vocational registration would not debar them from posts as part-time or whole-time Clinical Assistants in hospitals or group practices; such posts would probably offer as much responsibility as most women in this situation would wish to accept.

CONTINUING EDUCATION

163. Because of the speed of advance of medical knowledge and technique doctors in all branches of medicine must make unceasing efforts if they are to keep abreast of developments. The great changes which have taken place in medicine and medical practice during the careers of doctors now retiring may well be exceeded by those which will be experienced by doctors now entering the Medical Register for the first time, who can reasonably expect to be still

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* HENDRY, N. G. C., *Lancet*, 1967, ii, 299.

engaged in medicine in the twenty-first century. All doctors, in whatever branch of medicine, must have the opportunity and the time for continuing education in order to keep up to date in their own field and to remain reasonably well acquainted with developments in others.

164. The Health Departments have recently issued circulars on professional and study leave for medical staff in the hospital service,* and on postgraduate education.† One of the responsibilities of the regional postgraduate committees which we propose (see paras. 186–194) will be to ensure that there are adequate facilities in their areas for continuing education, not only for hospital doctors and general practitioners but also for those in medical administration, in local authority clinical services and in all other branches of medicine. We welcome the scheme also recently announced by the Health Departments to enable National Health Service Consultants who have not had the opportunity for systematic revision of the theoretical basis of their practice, or who wish to extend their knowledge, to take study leave to attend appropriate courses.‡ We should like to see more generous provision of Medical Research Council clinical research training fellowships, particularly to cover sabbatical periods spent in Britain, to enable clinical investigators to learn new techniques and improve their knowledge of the relevant sciences.

165. Some witnesses have suggested to us that continuing education should be made compulsory for all doctors in the National Health Service. Even if we thought such compulsion desirable in principle (and we do not) we could not define criteria which covered all forms of continuing education; to specify only some would be unsatisfactory. Every doctor should be free to choose those forms which best meet his own needs and suit his own circumstances. Compulsory continuing education would not, in our view, create the receptive spirit which is necessary if training is to be effective, especially at later ages; more positive measures are needed to create a climate in which doctors have a desire for continuing education. Undergraduate education and postgraduate professional training arrangements have a big part to play in this: they should inculcate in the doctor a pride in the job for which he has been trained and a realization that advancing maturity in no way reduces the appropriateness and helpfulness of systematic learning. Without such attitudes the right climate for continuing education will not exist. Although monetary incentives may sometimes be helpful in encouraging continuing education, we think that the interest of doctors themselves in keeping up to date would usually be sufficient: on the other hand, no doctor should suffer financial loss in making reasonable efforts to do so.

166. The Health Departments' arrangements for refresher courses for general practitioners have been very successful. The financial help that has been provided has been particularly important and the setting up of a Postgraduate Education Fund has substantially increased the number of doctors who attend; we hope that efforts towards further improvements in this kind of training will continue. Organised continuing education should not be restricted to formal courses, however. There should be more opportunities for a doctor to take part in up-to-date work in his own and other specialties,

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* H.M. (67)27 for England and Wales; S.H.M. 29/67 for Scotland.

† Ministry of Health Circular H.M. (67)33.

‡ *Brit. med. J. Suppl.*, 1967, **4,** 62.

and more functional contacts between doctors in different branches of medicine; these contacts, apart from their educational value, would help to unify medical services in the district. We recommend that general practitioners in particular should have increased opportunities for part-time hospital appointments, or short-term clinical attachments to supplement their normal experience. Domiciliary visits by Consultants can provide good incidental training for general practitioners. Unfortunately the Consultant is increasingly often not accompanied by the general practitioner because a mutually convenient time cannot be found; greater efforts should be made by both to gain the advantages of a joint visit and discussion. General practitioners often need information about the services the local authority can provide, and instruction in how best to make use of laboratory facilities available to them. Hospital doctors and general practitioners should have a simple introduction to management and operational research, which are now generally recognised as relevant to good clinical organisation and effective use of clinical resources.

167. Continuing education in pharmacology and therapeutics is particularly desirable for all doctors, both in the hospital service and in general practice. New drugs are constantly becoming available; doctors should be helped both to understand their effects and uses and to acquire a discriminating and critical attitude to the claims of their makers. In view of the difficulties many medical schools have had in the past in providing adequate undergraduate teaching and clinical experience in psychiatry, there is a special need for continuing education in psychiatry for doctors in many branches of medicine. This can be offered either in short intensive courses or, preferably, in longer-term series of group discussions—held perhaps on one half-day a week over several months—in which general practitioners, hospital physicians, public health doctors and others can participate with a psychiatrist. Such discussions can often best be centred on patients whom they or the psychiatrist himself are currently treating.

168. Postgraduate medical centres, many of which have been established in recent years, have a big part to play in continuing education. We think there should be such centres in most district hospitals, providing a base for an Area Organiser and/or Clinical Tutor (see para. 194), one of whose tasks would be to see that there was a lively programme of meetings and other group activities which would generally be based on the centre. Postgraduate medical centres also provide a setting where informal contacts between doctors in different branches of medicine can regularly be made. The postgraduate medical centre has so far proved to be the best location for an up-to-date medical library, which should be freely available for all doctors in the area.* Greater use should be made of sound and television programmes and tape libraries.

169. Our attention has been drawn to a plan† which the American Medical Association has been considering, with other professional bodies, for the continuing education of practising physicians in the United States. The aim of the plan is to make available expert medical knowledge on clinical

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* On the State of the Public Health. The Annual Report of The Chief Medical Officer of the Ministry of Health for the year 1965, p. 202. H.M.S.O., 1966.

Report of the Committee on Libraries to the University Grants Committee, para. 180. H.M.S.O., 1967.

† STOREY, P. B., The A.M.A. National Plan for Continuing Education (unpublished paper).

topics in respect of which current practice is particularly open to improvement: the individual doctor assesses his present practice and clinical needs; in the light of an authoritative review of the medical knowledge available, the appropriate instructional material is then made available to him for study in his own time. The ideas behind this scheme are well worth examining. A systematic approach of this kind to continuing education might with advantage be adopted regionally or locally.

170. Special educational arrangements should be made, probably on a local, part-time basis and when necessary on a personal basis, for married women doctors who wish to return to medical practice when family responsibilities have lessened (see para. 82). These arrangements should be the responsibility of the regional postgraduate committee, which should be able to arrange suitable training attachments in addition to any special courses required; the committee should be able to take advantage of many of the normal continuing education activities in its area.

POSTGRADUATE DIPLOMAS

171. In addition to higher university degrees and the higher qualifications of the professional colleges, a variety of postgraduate diplomas in medicine is offered by British universities and professional bodies (particularly the Conjoint Board of the Royal College of Physicians and the Royal College of Surgeons of England). Only the Diploma in Public Health is registrable under the Medical Acts.

172. Over twenty years ago the Goodenough Committee* thought that there were too many postgraduate diplomas in this country; to-day there are even more. Witnesses have suggested to us that preparation for diploma examinations tends to divert young graduates from more useful and productive work. On the other hand the diplomas have doubtless been useful in providing a target and a recognised standard of accomplishment for those who have an interest in a subject but who have not the need, the wish, or perhaps the ability to pursue it to a higher level.

173. We cannot see any clear place for most of these diplomas in the improved scheme of postgraduate education and training that we have proposed for British graduates. The most valuable parts of the courses leading to the diplomas will no doubt be incorporated in the professional training programmes of the specialties concerned, but we doubt whether the diplomas themselves need remain. Their retention might perhaps be advocated on the ground that it would facilitate the introduction into general professional training of a two-tier structure which catered specifically for those who were unable or disinclined to reach the level expected for satisfactory completion. But if preparation for such diplomas were incorporated into the general professional training arrangements, so that for example the Diploma in Child Health were seen as the normal finishing point of an appointment in paediatrics, the additional examinations required would change entirely the climate of the programme: they would inevitably come to dominate the whole training experience and would largely vitiate our concept of a broad assessment of the trainee's performance as a whole.

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* Report, p. 231.

174. We share the view of the Goodenough Committee* that specialist diplomas can give rise to misconceptions of the standard of training which their holders have undergone; in particular, the status of the diplomas may be misunderstood abroad. There might be some point in retaining such diplomas as a means of allowing a doctor to acquire at a later stage a specific qualification in a field other than that to which his general professional training had been directed, without going to the length of taking the supplementary training necessary to qualify him for formal recognition as a specialist in the second field. We think that many doctors will wish to be doubly qualified, and we hope especially that many general practitioners will be qualified both in general practice and in a hospital specialty, so that they can hold part-time Specialist appointments in hospitals. We doubt, however, whether a separate apparatus of examinations and diplomas is needed for this purpose: additional training could be recognised by an appropriate endorsement of the general professional training certificate, after an assessment on less formal lines than those of the traditional diploma examination.

ADMINISTRATIVE ORGANISATION

175. One important reason why postgraduate medical education and training in this country has been so inadequate in former years is that it involves activities and responsibilities which, for good historical reasons, have been assigned to different bodies. The resulting situation has been described to us as chaotic, and until recently no serious attempt at co-ordination has been made. We hope that what we have said already has made clear that the interests of all concerned—the National Health Service, the professional bodies and the universities—lie in cooperating in a comprehensive scheme of postgraduate training along the lines we have proposed. We shall now discuss the machinery needed centrally, regionally and locally for planning such a scheme and putting it into effective operation.

CENTRAL ORGANISATION

176. A central body is needed to exercise general oversight of postgraduate medical education and training in Great Britain. Its functions would be to ensure that:

(a) there was a comprehensive scheme for postgraduate professional training for all the specialties, including general practice and community medicine, on the lines we have proposed;

(b) sufficient approved training posts were available;

(c) effective professional training schemes existed in each region;

(d) effective arrangements existed for the assessment of general professional training;

(e) continuing education was being effectively organised both nationally and regionally;

(f) proper arrangements existed for overseas doctors who came to Britain for professional training;

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* Report, p. 233.

(g) ideas were exchanged between different parts of the country, and that Britain kept abreast of developments in postgraduate education elsewhere.

177. In our view these functions could be carried out effectively only by a body representing the universities, the National Health Service authorities and the professional colleges or similar organisations. There would, of course, be some aspects of the organisation's work which would be the primary concern of only one or two of the three interests represented, or even of a particular professional body, but major policy decisions would have to reflect the views of all three of the main interests concerned if such decisions were to be effective. In particular, the views of the National Health Service authorities would have to be taken into account by the central organisation in the course of its own deliberations if it were to avoid the risk of becoming merely a discussion group with no means of ensuring that proper attention was paid to its recommendations. We do not think that the University Grants Committee need be represented on this central organisation; the appointment of an observer from the Department of Education and Science should suffice to ensure that the Department was consulted on any financial implications for the universities.

178. We therefore recommend that there should be a central body, to be known as the "Central Council for Postgraduate Medical Education and Training in Great Britain," for the general oversight of postgraduate medical education and training in Britain. The Central Council, which should not be large, should be composed of representatives of the universities, of the main branches of the National Health Service and of the appropriate professional colleges or similar bodies in the main fields of medical practice, and should have an independent chairman, perhaps appointed by a Minister after consultation with the Central Council.

179. The Central Council, through a regional and local organisation (see paras. 186–194), would be responsible for supervising the operation of the arrangements for postgraduate education and training which we have proposed. The universities would be responsible for ensuring that medical graduates in their intern year satisfactorily completed their basic medical education; and, in the professional training stage, for providing teaching skills, facilities and—perhaps most important—a critical appraisal of standards which was independent both of professional practice and of National Health Service requirements. The universities would of course also be responsible for postgraduate medical students undertaking research and preparing for higher medical degrees. The professional bodies would be responsible in their own specialties for formulating systematic programmes of professional training, for inspecting training posts and for arranging formal examinations. The National Health Service would have to provide most of the professional training posts, many of the trainers and most of the money required.

180. The first duty of the Central Council would be to ensure that a comprehensive scheme was introduced for postgraduate training in each specialty, including general practice and community medicine, on the lines that we have proposed, and that the scheme was administered in an enlightened manner.

The Central Council would need to see that in each specialty the appropriate professional body devised a flexible programme of professional training which met the broad requirements for vocational registration and which had as much as possible in common with the training programmes of other specialties.

181. The Central Council should, with the advice of the professional bodies, lay down criteria for the approval of professional training posts and ensure that the National Health Service provided enough such posts both to meet future requirements for trained staff in Britain, as far as could be foreseen, and to give training to a reasonable number of postgraduate students from overseas (see Chapter 11). The Central Council should ensure that the National Health Service and the universities together provided enough teachers and teaching facilities throughout the country to make the training programmes practicable. Where in any region there were obvious deficiencies the Central Council should take the initiative to ensure that the situation was remedied. The Central Council would also need to keep a general oversight of the matching programme for general professional training (see para. 193), to make arrangements for any necessary liaison between regions and specialties and, where necessary, to stimulate regional interest in postgraduate education and training.

182. The Central Council would have the responsibility of making effective arrangements for monitoring trainees' progress during general professional training and for the periodic and final assessment of trainees' performance. Within the framework of the Central Council and the corresponding regional organisations (see paras. 186–194), the professional bodies would be responsible for particular arrangements in their own fields. If, regrettably, any specialty were not represented by a suitable professional body the Central Council should be expected to make the necessary arrangements needed in that specialty.

183. The Central Council would be expected to keep abreast of developments in postgraduate education and training throughout the country and abroad. The Central Council's secretariat should be strong but not large; its activities should be confined to the main responsibilities of the Central Council, and detailed administration should be undertaken elsewhere.

A COMMITTEE FOR SCOTLAND

184. Postgraduate education throughout Britain should follow a single general pattern and be closely co-ordinated. If an autonomous central organisation in this field were to be set up in Scotland there might be difficulties in achieving these aims, and separate secretariats for Scotland and for England and Wales would be much weaker than a single combined office. We recommend that Scottish interests be represented on the Central Council; nevertheless there would be advantages in arranging, within the framework of the arrangements for Britain as a whole, the maximum delegation of Scottish affairs to a Scottish committee. A separate government department is responsible for the health services in Scotland, and although some of the traditional differences between Scotland and England will be reduced or removed by our recommendations elsewhere in this Report important differences relevant to medical education will no doubt remain. Furthermore

the establishment of a Scottish Committee should permit the Central Council for Great Britain to be reasonably small, because not all the Scottish bodies would then need to be directly represented on it. The Scottish Committee for Postgraduate Medical Education and Training would essentially be an organ of the Central Council, concerning itself with the application to Scotland of the Central Council's general policy and with any purely Scottish matters. It would act as the co-ordinating body for the regional postgraduate committees in Scotland. The Scottish Committee should comprise representatives of the Scottish universities, Scottish Health Service authorities (including the Scottish Home and Health Department) and the Scottish professional colleges; such a body could evolve from the existing Scottish Postgraduate Medical Association which, though founded as recently as 1961, has already made a useful contribution to postgraduate medical education and training in Scotland although it has lacked the advantage of clear objectives.

ROLE OF THE GENERAL MEDICAL COUNCIL

185. We have already indicated that in our view the General Medical Council should assume a function in postgraduate education and training similar in principle to that which it now efficiently discharges in the undergraduate sphere. The Council should specify in broad terms, and constantly keep under review, the professional training, experience and qualifications necessary to achieve recognised competence to exercise independent clinical judgment in a specialty, and should keep the register of those who have been judged to have reached the required standard. The Council would not appropriately concern itself with the routine assessment of individuals or with the detailed structure of programmes of postgraduate training in particular fields. Although it would have power to investigate the provision made for training which led to vocational registration in any field of medicine, the General Medical Council would no doubt use these powers with great reserve. The Council has in the past always shown itself willing to be guided by the licensing bodies in respect of important questions in undergraduate medical education; it would likewise, no doubt, pay the fullest attention to the views of the appropriate professional bodies in respect of postgraduate medical education. We have every reason to expect that the Council would approach postgraduate education with the flexibility and broadness of purpose that have characterised its approach to undergraduate medical education in the past ten years or so. In our view the Council should continue to have the positive object of encouraging medical education to develop as well as the more negative role of a regulatory body.

REGIONAL AND LOCAL ORGANISATION

186. The implementation of our proposed scheme should, we think, include the establishment throughout the country of committees responsible for seeing that postgraduate medical education and training was efficiently carried out in their areas, within the framework of policy laid down by the Central Council but with considerable opportunity for local initiative. Each committee might in general be responsible for a hospital region, though the territory of some of the largest existing regions might with advantage be divided between two committees; if future changes in the organisation of the hospital service should result in the alteration of the present regional structure

our proposals could, we think, be adapted accordingly without difficulty. In many regions there already exist active committees for postgraduate medical education that might easily develop into the bodies which we have in mind.

187. The regional postgraduate committees should be small tripartite bodies corresponding to, and organically related to, the central organisation. Hospital authorities must obviously be primarily responsible for arranging the necessary series of related appointments, with provision for study leave and systematic instruction as appropriate, which will be the basis of each professional training programme. In a number of fields other National Health Service authorities—local executive councils and local health authorities, for example—will play some part. The local university must participate in the provision of teaching and of the facilities needed for it.

188. Much of the inspiration and guiding spirit in the regional postgraduate committees should, in our view, come from the professional bodies. They must be adequately organised and represented throughout the country, so as to ensure that training posts are appropriate and sufficient in number, that high professional standards are maintained and that trainees have access to independent professional advice throughout their training. Some of the professional bodies have made great strides in this direction already. The Royal College of Surgeons, in particular, has taken the lead in appointing surgical tutors for postgraduate training in each of the hospital regions; if each of the professional bodies were to provide a network of appointments of this kind together with a strong regional organisation we would see no difficulty in ensuring effective implementation of a good training scheme throughout the country. We hope that the professional bodies will extend and consolidate their educational interests in this way, and that time spent by their representatives as tutors or assessors, or in other educational work, will be taken into account in their contracts with the National Health Service.

189. An important function of a regional postgraduate committee would be to provide a careers advisory service for all doctors of whatever branch or grade, whether in the National Health Service or not. Each committee would also be responsible for seeing that in its area there were proper professional training programmes in each specialty (including general practice and community medicine), that schemes for systematic rotation of appointments were available and that applicants were effectively matched to training appointments. The committee would need to see that the number of posts available for general professional training, and the number of intensive training posts for Hospital Specialists, was in accord with the allocations for the region, and that these posts were not dominated by service needs; the committee would be responsible for ensuring that all training posts were frequently inspected.

190. The regional committee should frequently review the progress of doctors in professional training in its area; the committee ought at regular intervals to receive statistical information about the performance of Registrars in its area in the assessment procedure. The committee would be responsible for seeing that regular reports were provided by the supervisors of Registrars and for monitoring the progress of the latter up to the point where a comprehensive review of their performance could be considered by the Central

Council (see para. 182). Formal examinations would probably have to be set nationally by the appropriate professional bodies but might with advantage be administered at regional centres, by arrangement with the committees.

191. The regional committees would be responsible for seeing that Junior Specialists, whether or not in intensive training posts, received appropriate professional training; these committees would therefore assimilate the functions of the Joint Advisory Committees on Senior Registrar appointments, which have proved so successful in many parts of the country. We do not think that Junior Specialists will need such close supervision as doctors in general professional training, but advice should be available to them when it is needed.

192. The other responsibilities of the regional committees would include those of seeing that Assistant Principals in general practice receive appropriate professional training (see para. 121) and advice, of ensuring that adequate facilities for continuing education exist for all doctors in the area in every branch of medicine (see paras. 163–170), and of facilitating and where necessary encouraging the provision of training facilities at local level, particularly in postgraduate medical centres (see paras. 168 and 194). In particular we suggest that the regional committees should ensure that sufficient facilities exist in their areas both for doctors in training who wish to engage in whole-time research (perhaps leading to higher degrees in science, medicine or surgery) and for fully-trained Specialists and Consultants from within and without the region, including doctors from overseas, who wish to learn special techniques and procedures that may have been developed in the region. We have suggested in paragraph 65 that the administrative aspects of the intern year should be primarily the responsibility of those universities which have undergraduate clinical departments. Considerable cooperation will, however, be needed between medical schools, and between them and hospital authorities, in arranging for the approval and continuing inspection of posts; this function could probably be facilitated by the regional committees.

193. We expect that the university officer primarily concerned with postgraduate medical education would be appointed after consultation with the regional committee, and would be not only a member of the regional committee but also its chief executive officer. Only a small secretariat should be needed by the committee itself. Much of the general work of the committees would necessarily fall on university offices, which would need to be reinforced. The detailed administrative work arising from the operation of matching a prospective trainee with a suitable series of appointments for general professional training could probably best be done mainly by the staff of the regional hospital board. There might be a residual central liaison function in the arrangement of appointments which by choice or necessity were not provided for in a single region.

194. The organisation and administration of professional training will, we think, be mainly carried out at national and regional level, but a great deal of the supervision of young men and women in training, as well as the organisation of more formal aspects of postgraduate education, such as lectures and clinical conferences, will require the further development of postgraduate medical centres, which are already working so admirably in many parts of

the country. The formation of a strong regional organisation need not and should not have the effect of stifling local initiative, on which a great deal of the success of postgraduate training must depend. We hope that the staff of the postgraduate centre, which will often cover the area served by a district hospital, will be able to give the regional committee considerable help in obtaining the information and progress reports which the committee will require, as well as continuing to play a leading part in providing continuing education for doctors in all branches of clinical practice and community medicine. Thus we see the regional and local organisations as complementary. We have suggested in paragraph 168 that an Area Organiser and/or Clinical Tutor will be needed for continuing education. We think he should be appointed by the regional committee and that he should have a position of some influence in the activities of the local postgraduate medical centre.

FINANCIAL ASPECTS

195. We do not propose to discuss in any detail the financial responsibilities implied by our proposals for postgraduate medical education. Clearly these proposals will involve an increase in expenditure, mainly in respect of staff salaries, but also to some extent in capital provision. The division of expenditure in this field, and particularly the relative shares of the universities and the National Health Service, has been in controversy for some time. The University Grants Committee has pointed out to us, with the full support of the Department of Education and Science, that universities already devote a very significant part of their resources to professional medical training, which is not part of their primary academic functions, and could not afford to spend more on it. We agree with the Committee's attitude. Preparation for higher university degrees is a proper object for the expenditure of university funds; training of a more professional, rather than academic, character ought to be paid for by the National Health Service, as by far the most substantial employer of doctors in this country. The National Health Service ought in our view to accept responsibility for financing the provision of all medical training that is not of a mainly academic kind, and should finance the working of the Central Council, the Scottish Committee and the regional postgraduate committees. Where the teaching and the facilities for such medical training are provided by universities, the cost should be repaid by the National Health Service. Whether this should be done by way of fees for individuals, by a periodical blanket payment on a regional basis, or by a book-keeping transaction at central government level, is a matter on which we do not think we need make any recommendation.

CHAPTER 4

THE UNDERGRADUATE MEDICAL COURSE

PURPOSE AND OBJECTIVES

196. The basic attraction of medicine for the young student is the opportunity it offers him of serving humanity in any one of many ways, for example, by helping the sick or infirm, in advancing medical science by research or by improving the organisation of medical care. The fundamental problem in devising any medical course is to provide some means of accommodating these different aspirations within a single educational framework. For close on a hundred years the undergraduate medical course has consisted essentially of a preclinical course devoted to the study of anatomy, physiology and what is now called biochemistry, followed by a course of clinical instruction which includes, in addition, such paraclinical subjects as pathology and microbiology. With the enormous expansion in medical and scientific knowledge during the past thirty years or so, demands have inevitably come for the introduction of new subjects and the expansion of the old without any increase in the time allowed to complete the curriculum. As a result, medical courses have become so congested and excessively factual in content that their educational value is open to question.

197. We cannot emphasize too strongly that the undergraduate course in medicine should be primarily educational. Its object is to produce not a fully qualified doctor, but an educated man who will become fully qualified by postgraduate training. This does not mean that we think the vocational aspect of undergraduate medical education should be ignored: the student clearly has a professional career in view and his education must be biassed in this direction. Our view in this respect corresponds with that expressed by the Robbins Committee when discussing higher education in general:

> " We deceive ourselves if we claim that more than a small fraction of students in institutions of higher education would be where they are if there were no significance for their future careers in what they hear and read; and it is a mistake to suppose that there is anything discreditable in this. Certainly this was not the attitude of the past: the ancient universities of Europe were founded to promote the training of the clergy, doctors and lawyers; and though at times there may have been many who attended for the pursuit of pure knowledge or of pleasure, they must surely have been a minority. And it must be recognised that in our own times, progress—and particularly the maintenance of a competitive position—depends to a much greater extent then ever before on skills demanding special training. A good general education, valuable though it may be, is frequently less than we need to solve many of our most pressing problems.
>
> " But, while emphasising that there is no betrayal of values when institutions of higher education teach what will be of some practical use, we must postulate that what is taught should be taught in such a way as to promote the general powers of the mind. The aim should be to produce not mere specialists but rather cultivated men and women. And it is the distinguishing characteristic of a healthy higher education that, even where it is concerned with practical techniques, it imparts them on a plane of generality that makes possible their application to

many problems—to find the one in the many, the general characteristic in the collection of particulars. It is this that the world of affairs demands of the world of learning. And it is this, and not conformity with traditional categories, that furnishes the criterion of what institutions of higher education may properly teach. "*

198. That the traditional undergraduate medical curriculum is unsatisfactory is now widely recognised; most medical schools have recently embarked on its modification in a variety of ways. The driving force in some at least of these experiments has been a desire to find a method of meeting in one course the differing needs and interests of students.† Many of our witnesses have expressed deep concern about the problem of educating students for such differing careers as general practice, specialist practice in medicine or surgery, and psychiatry. Some have even suggested that the only solution is to adopt two entirely different training courses with different entry qualifications, one heavily scientific and the other, with only a minimum of scientific content, aimed at the production of general practitioners. We do not accept this view. In other fields, such as engineering or chemistry, education at first degree level in different specialised branches (e.g. civil or electrical engineering, physical or organic chemistry) differs only in the options taken, usually in the latter stages of the course; there is a basic core common to all branches. Medical education should, we believe, follow a similar pattern, full use being made of alternative options to satisfy the different needs of individual students.

199. In the undergraduate curriculum far too little attention has generally been paid hitherto to the study of the behavioural sciences (psychology, sociology and related disciplines) and their application to medical care. An essential part of a medical student's education is learning how to treat human beings in trouble, to gain their confidence and to understand the psychological and social background to their physical problems; in his profession he will often be called upon to make judgments on evidence which, without such understanding, would be inadequate. Much of this the student will learn in the course of early clinical practice but his learning will be easier, quicker and more successful if he has had a proper introduction to the study of individual and social behaviour. A knowledge of the behavioural sciences is also, of course, a prerequisite for the study and practice of psychiatry.

200. We take the view, therefore, that the aim of medical education should be to produce, at graduation, a person with two essential qualifications. He should have, first, a knowledge of the medical and behavioural sciences sufficient for him to understand the scientific basis of his profession and to permit him to go forward with medicine as it develops further; and, secondly, a general introduction to clinical method and patient care in the main branches of medicine and surgery, together with an introduction to social and preventive medicine. We hope that he will be taught throughout in such a way as to inculcate in him a desire to continue learning not only during the postgraduate training which we hope he will undertake (see Chapter 3), but throughout his professional life. In the light of these considerations and of the evidence we have received we have sought to establish a basis on which an undergraduate

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* Report of the Committee on Higher Education, Cmnd. 2154, paras. 25–26. H.M.S.O., 1963.

† See Appendix 19, Section C.

medical school can, with the guidance of the General Medical Council, devise an appropriate curriculum.

STRUCTURE OF THE CURRICULUM

201. The medical curriculum has traditionally been divided into two more or less self-contained stages. The preclinical stage usually lasts five or six university terms and is devoted mainly to the teaching of medical sciences including particularly anatomy, physiology and biochemistry; when covering six terms, it includes some instruction in paraclinical subjects such as pathology, microbiology and pharmacology. The clinical stage, usually lasting about three years, includes instruction in paraclinical subjects, but is mainly devoted to teaching the application of the medical sciences to the practice of clinical medicine; the teaching is illustrated by, and often based substantially upon, experience in the care of patients. The two stages are often thought to be too sharply divided and from the student's viewpoint the division is exaggerated by the Second Professional Examination (familiarly known as the " 2nd M.B. ") in anatomy, physiology and biochemistry, which he must pass at the end of the preclinical course. Clinicians argue that not enough weight is given to clinical aspects of the medical sciences, while teachers of the preclinical subjects claim with equal force that their task is to give a solid grounding in science, leaving its clinical application until later. Many students allege that the preclinical subjects as taught to them appear to have so little relevance to practical medicine that they find the early part of their course discouraging and their interest is aroused only when they reach the clinical stage. No doubt all of these views have some validity. Efforts are now being made in many schools, in different ways, to effect a better integration of the curriculum. In the initial phase of any medical course the scientific basis must be laid for an understanding of structure and function in man before intensive clinical work can be undertaken; but unfortunately this has led to a widespread impression that the course consists of two discrete parts. The continued use of the terms " preclinical " and " clinical " serves to heighten and perpetuate this impression. We should prefer to see these terms no longer applied to subjects and parts of the medical curriculum; we think they are bound to lose their significance as the curriculum becomes better integrated. Their use is so widespread and well established, however, that they are likely to remain for some time; we employ them frequently in this Report as a matter of convenience, although we regard the undergraduate medical course as a single whole and would prefer it to be described simply as made up of education in a variety of clinical and non-clinical subjects.

202. The relationship between the clinical and non-clinical aspects of the undergraduate course, and the extent to which the two aspects should be integrated, have been argued at great length in all countries with an advanced standard of medical education; the arguments are familiar to those who are concerned with the planning of medical courses, and we need not discuss them in detail. Most medical students are interested primarily in learning how to alleviate human suffering, and in any subject the good teacher constantly strives to relate his teaching to the interests of the student; moreover, a carefully-planned relationship between instruction in the clinical and non-clinical aspects of the course would reduce the unnecessary duplication, and

the inconsistencies of emphasis, which have often characterized the traditional pattern of teaching. If, however, the medical sciences were to be taught solely or mainly in relation to diseases of human beings students could not, in our view, be given a broad foundation of scientific knowledge or a real understanding of scientific method and principles; nor could teachers be attracted with the interest in scientific research, and in the deeper study of their subject, which is essential if the advancement of the medical sciences is to continue. We think that as a good working rule the main responsibility for the organisation and content of teaching in any preclinical subject should rest with a teacher whose main interest and activities lie in the advancement of the subject itself, rather than in its application to the practice of medicine. We hope, however, that the problem of finding a satisfactory relationship between the different aspects of the course will not be exaggerated, for it is becoming to some extent unreal. Preclinical teachers are progressively introducing clinical illustrations into their teaching. Clinicians, for their part, have in recent years become increasingly interested in the scientific aspects of their work and have an invaluable contribution to make, not only in maintaining the interest of the preclinical student and constantly reminding him of the clinical relevance of the medical sciences, but also in keeping other teachers in touch with the needs of practical medicine. In any case, an increasing proportion of medical graduates whose abilities fit them for teaching has in recent years been attracted into clinical work; unless the preclinical sciences are to be taught almost entirely by non-medical scientists (which would be undesirable) an increasing proportion of the teaching in these subjects must be done by teachers actively engaged in their clinical application. We discuss later (paras. 216, 228 and 233) some possibilities of carrying the process of integration further without losing sight of the essential difference of emphasis between learning scientific methods and principles and applying them in the service of medicine. If this distinction is observed, every encouragement should be given to experiments with different forms and degrees of integration, in the realisation that no single pattern of teaching is likely to be equally satisfactory for all schools, all teachers or indeed all students.

203. The more diversity there is in the curriculum pattern, and particularly in the relationship between the non-clinical and clinical elements, the more difficulty students will find in moving from one medical school to another during their course. The majority of medical students in this country remain at one medical school for the whole of their course. The need for a major increase in the output of doctors (see Chapter 6) will require the retention of a non-clinical school at St. Andrews and probably, in our view, the provision of preclinical courses in some other universities which cannot themselves offer facilities for clinical education but can arrange for their students to proceed for this purpose to an established medical school, preferably nearby (see paras. 377 and 380). The number of students involved will be relatively small, however, especially when Oxford's new teaching hospital is built and if undergraduate clinical teaching is established at Cambridge (see para. 379); the whole structure of undergraduate medical education cannot and ought not to remain rigidly divided for the convenience of students who have to move during their course. The problems of transferring from one medical school to another will be greatly eased if the flexible type of medical curriculum we propose later in this chapter is generally adopted, but we think the best

solution is for " separate " preclinical schools to develop close links with, and as far as possible model their courses on, those of the university to which they expect most of their graduates will go for their clinical education.

LENGTH OF THE MEDICAL COURSE

204. For most students the medical degree course at a university lasts about five years, without counting the premedical courses offered at many English universities and the Scottish " first year " which fulfils the same function (see paras. 311-312). A substantial minority of students take an additional year in order to gain, as well as a medical degree, a degree in one of the medical sciences. Such students may either take a full three-year Honours course instead of the usual preclinical course, as has been traditional at Oxford and Cambridge, or intercalate a year's additional study of a single scientific subject between the preclinical and clinical stages; other possibilities have been introduced in recent years, particularly at some Scottish universities. During the clinical stage of the course English medical schools allow students much shorter holidays than the normal university vacations, and clinical students at Scottish medical schools tend to spend a great part of their vacations in acquiring clinical experience in hospitals. After graduation, at least a further year must be spent in approved training posts before full registration for professional practice can be granted. There are many complaints that the time taken to graduate is too long, and a number of witnesses have suggested that the course should be reduced by at least a year, both in the national interest (to increase the supply of doctors and reduce the cost of educating them) and in the interests of students—many of whom, it is said, do not really begin to learn effectively until they have the opportunity to exercise some professional responsibility.

205. As has been emphasised above, the essential object of the undergraduate course is to educate the student to university degree standard both in the medical sciences and in the application of these sciences to human diseases. This is a formidable task which nobody could expect to be completed in the three years at present accepted (though not without reservation by many people) as adequate for a first degree course in most " non-vocational " subjects. Conceivably, it could be accomplished in four years, but a close examination of the curriculum makes this possibility very doubtful. Practically all our witnesses have accepted that in the preclinical stage the student should have a reasonable grounding not only in the traditional medical sciences, but also in a variety of other subjects whose importance has been recognised in more recent times, particularly psychology and sociology, statistics and genetics. Provision must also be made for at least an introduction to paraclinical subjects such as general pathology and pharmacology, in addition to the clinical side of the curriculum. No doubt some of the traditional content of the preclinical curriculum can be removed without great loss. Anatomy is the subject in which a reduction is most often advocated; a considerable amount of time could be freed for other subjects if detailed dissection were reduced, as is discussed later in this chapter. Even if advantage were taken of all possible opportunities of rationalising the teaching of preclinical and paraclinical subjects, however, we cannot see how a medical school could in

two years provide instruction in all the subjects now recognised as necessary, let alone present them in such a way that the student really obtained a proper grounding in, and appreciation of, the scientific basis of medicine. A lengthening of the preclinical and paraclinical aspects of his education appears to be inevitable.

206. The clinical side of the course has also become overcrowded and indigestible, in the view of a great many teachers. The growth of knowledge, the increase in specialties all of which want to be substantially represented in the course, and especially the traditional aim of producing a man trained for general practice in the old sense—capable of doing almost everything and hence having had some contact with almost everything—have led to an attempt to achieve an impossible breadth of coverage. We have seen evidence, however, that students are not always as busy as the curriculum would imply and that for them the clinical part of the course is often a rather leisurely business, or at the most, an alternation of intensive work with spells of boredom and inactivity.* This appears to be largely due, however, to a lack of good organisation: we discuss this problem in Chapter 10. Several medical schools have been able, by planning the first two clinical years carefully, to devote the final year almost entirely to supervised experience rather than to organised instruction. We believe that this is an entirely proper development; as we indicated earlier, the undergraduate course must be selective, and its aim should be to produce the basic material from which the practising doctor can be fashioned. In our view, strictly vocational training should come after graduation. We have proposed in Chapter 3 a scheme of postgraduate professional training which includes an initial year of general clinical experience under close university supervision, followed by a series of training appointments intended to provide the young doctor with the clinical experience he needs before he can be expected to exercise independent clinical judgment. In view of these proposals, we think the undergraduate clinical course should be remodelled and reduced in length; we would not suggest, however, that anything less than two years would be adequate for the purpose.

207. Given, then, that with the standards and levels of study commonly accepted at present more than two years are required for the preclinical and general paraclinical elements of the course, and that at least two years are required for the clinical side, we are faced with a need for a total length of over four years at the very minimum. In fact we think that, irrespective of the arrangement of the preclinical, paraclinical and clinical elements, an undergraduate could not possibly be given in less than five years the kind of education that we consider appropriate for a university degree in medicine in modern circumstances. As will be seen later, we are not advocating that all students should spend three years studying preclinical and paraclinical subjects followed by two years in clinical medicine; but we believe that a course of five years is required to provide a proper grounding in the essential subjects with which all prospective doctors need to be acquainted, and also to allow some opportunity for study in greater depth or breadth according to the individual student's inclinations and capacities.

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* Evidence of Professor J. Anderson and Appendix 19, Section B, III(e).

208. During this period of five years the total duration of clinical study, and the sequence of clinical and non-clinical subjects, might vary between schools and between students within any one school. All students should, however, be given an introduction to the incidence of disease in the community at the beginning of the course (see paras. 218 and 258). Those who choose to study in clinical subjects at an early stage (see paras. 216 and 233) must be given at an appropriately early point the introduction which all students must have to elementary clinical method. The patterns of medical course available in each school should be decided by an interdepartmental committee of teachers appointed by the faculty of medicine. The members of this committee should include junior staff, should be in close touch with student opinion and should plan ways and means of assessing results.

THE PRECLINICAL STAGE

THE CONCEPT OF HUMAN BIOLOGY

209. In examining the possible make-up of the preclinical element in a course of the kind discussed in the preceding paragraphs, we have been particularly interested in the numerous proposals which have been put forward in the past few years based upon a three-year degree course in human biology. Many universities either propose to institute courses of human biology or profess to be teaching human biology already. In addition, several medical schools provide courses which, though not so described, can in some respects be classified as courses in human biology.

210. The papers of the Working Parties on a School of Medicine and Human Biology* represent the first fully argued case for founding medical education upon a degree course in human biology. The Working Parties define the subject only by implication, but their concept of it (they point out that there could be several others) includes the elements of the subjects already in the conventional preclinical course, together with psychology, genetics, statistics and sociology; moreover, they recommend bringing forward into the preclinical years subjects, like epidemiology and microbiology, which are often taught only to clinical students. The Working Parties envisage that the course would be suitable for students other than those intending to become doctors, and medical students might in fact form only a minority of those taking it; the third year of the proposed course offers a variety of elective subjects which would go some way towards providing for the different future needs of its students.

211. The term human biology as used in the documents of the Working Parties is clear enough, but elsewhere it has no settled meaning. Some appear to think its purpose would be fulfilled by a rather orthodox combined pre-medical and preclinical course with the addition of some psychology and social science; others regard it as one ingredient of a preclinical course, of the same standing as genetics or statistics. We prefer to think of human biology in much broader terms: it should surely embrace the origin, evolution and

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* School of Medicine and Human Biology: Reports of the Working Parties. Research Publications, London, 1963.

geographical deployment of mankind; the growth of human populations and their structure in space and time; human development and heredity, the properties of the human genetic system and the nature and import of the inborn differences between individuals. In this wider conception, human biology should include human ecology and physiology and many of the aspects of human behaviour that are the concern of sociology and cultural anthropology—among them, for example, the history and significance of family life, love, play and aggression. Finally, human biology should include an account of the nature, origin and development of communication between human beings and the non-genetical system of heredity founded upon it. No existing or planned course of human biology has such a broad syllabus, although most contain some elements of it.

212. Human biology thus defined could make a very good degree course without necessarily being a suitable preparation for a medical career. We do not think it could be criticised as having the character of a " soft option ": a course founded largely on genetics, population dynamics and statistics would probably be more exacting in point of intellectual effort than anything that came after it. It will not provide a deep enough foundation for basic medical research, the future practitioners of which will still have to take degree courses in microbiology, biochemistry, physiology, etc., unless they take such courses for a further year or two at M.Sc. level after their first degree in human biology; this is not an insuperable objection, however (see para. 224). The main difficulties in using it as an introduction to medicine are, first, that its appeal is too general and impersonal for a career in a profession that is centred on the treatment of individuals—it may not gratify the particular vocational urges that lead people to a medical career; and, secondly, that in being made suitable for people who are not going to be doctors it becomes proportionately less suitable for people who are going to be doctors.

A FLEXIBLE COURSE STRUCTURE

213. Although we think a course in human biology could not in a single form be simultaneously suited to the needs of medical and of non-medical students there are several ways in which the human biology concept could, in our view, be adapted so that a substantial part of a course suitable for those intending to study medicine might be common also to those aiming at, say paramedical and social work. In particular the idea of a medical course whose initial stages would be common to university preparation for other careers has much to commend it. Such a course would, for example, enable the final choice of medicine to be deferred until the student had had some experience of university life; a number of students who enter other faculties, and cannot transfer because of the rigidity of present courses, might then be attracted into medicine.

214. A course offering perhaps two years of subjects common to all students, with a division thereafter into medical and nonmedical streams which would follow different options in the third year of study, would represent a considerable advance on the traditional course structure. Even more flexibility seems desirable, however. Most students entering medical faculties have already decided on a career in medicine; they differ widely in their particular

career intentions (e.g. general practice, surgery, medical research).* We believe that a more flexible course can be devised which will not only provide the essential background to the clinical aspects of medical education, but will also justify the award of a degree in medical science; some universities in Britain are already working out proposals on these lines. We have in mind a modular structure like that of many university courses in the United States. The course would be built up of self-contained modules, each of which would represent a specified proportion of a year's work (either in an individual subject or in a combination of subjects on a single theme) and would count as an agreed number of course-units. Award of the degree in medical science would depend on satisfactory completion of modules carrying credit for course-units equivalent to three years' work. The educational environment need not always be the laboratory or classroom of the traditional preclinical sciences; we hope students will increasingly be able to undertake in a social or clinical context the kind of rigorous study that has hitherto been thought possible only in such subjects as anatomy, physiology and biochemistry. In assessing requirements for the medical science degree, credit should be given for any relevant work a student may have done in another faculty (e.g. dentistry) before entering upon the medical course.

215. In order to ensure an adequate and orderly coverage of the essentials, the choice of subjects open to the student would need to be controlled to some extent; a prescribed number of course-units would have to be gained in specified subjects or in specified combinations of subjects. For example, the student might be required to gain a certain number of units in the essentials of anatomy and physiology, but in one school he might meet this requirement by taking separate modules in each subject, while another might require him to take modules to an equivalent total value in which both subjects were combined. In addition to these compulsory subjects there would be a group of modules designed to carry the course forward in fields regarded in general as desirable for all students but with some individual choice among small ranges of alternatives. For example, all students might be thought to need instruction, beyond that which was given in the compulsory subjects, in the general field of the behavioural sciences: they might, however, be offered the choice of additional modules in psychology or sociology. Similarly, all students might be required to take some instruction in clinical science and offered a choice, for example, between clinical pharmacology and clinical physiology. Finally, the student would be required to gain a number of units in modules chosen from a wide range of options according to the inclination and interest of the individual. Viewed in this way the course qualifying for the degree in medical science would consist of three elements: a group of compulsory subjects, a group of limited alternatives, and a group of options (equivalent to less than one year's work in all) in which a large measure of choice would be open to the student to pursue his special interests.

216. The timing and order in which modules of all three kinds were taken should be open to adjustment to some extent to suit the needs of the individual student as seen by himself and his tutorial adviser. Some witnesses have suggested, for example, that the average school-leaver in this country is not

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* See Appendix 19, Table 5C.

sufficiently mature to face a course in human anatomy; we are far from convinced that this is so, but the course structure we have suggested would allow the student's introduction to anatomy to be delayed, if this were desired, until late in the first year or even until the second year of study. Moreover, a student whose individual interests lay in some clinical aspect of the medical sciences should be allowed to select alternatives or options which he might be able to take only after an appropriate period of clinical instruction. Thus while many students would meet the requirements for a medical science degree by the end of their first three years, others might not complete them until a later stage—in some instances perhaps not until after they had finished the clinical part of the course.

217. In the application of these principles to the construction of practical medical curricula certain points should be kept in mind. First, optional modules available in the earliest stages of the course should if possible include short intensive periods of instruction in the traditional premedical subjects and mathematics. Students who had not previously taken one of these subjects to the level required for the proper understanding of the medical sciences based upon it could thus fill the gap in their background; less time would then be available to them for other optional work at a later stage, but such a drawback cannot be avoided in some cases if entry requirements are to be broadened as they should be (see paras. 304–310).

218. Secondly, the clinical aspects of medicine should be introduced into the course at an early stage, as we have outlined in paragraph 208, but we do not believe that any one way of doing this has yet proved wholly satisfactory; we think further experimentation is needed. In addition, the non-clinical subjects should, where appropriate, be illustrated with examples of their clinical application. Some instruction in elementary clinical method should be compulsory for all students before they begin their main period of clinical study. Apart from organised instruction, opportunities should continue to be provided, perhaps in the vacations, for students to observe clinical work in hospital.

219. Thirdly, the optional modules available should be such as to permit a student either to extend the range of his knowledge by studying more than one subject or to go more deeply into a particular subject. These alternatives are necessary if the course is to meet the needs of the future general practitioner or hospital specialist as well as those of the potential teacher or research worker. Optional study has traditionally been regarded as something extra, to be taken by only a small proportion of undergraduates, and has usually taken the form of an intensive study of a single science subject for one or even two years. Recently, as interest has grown in the advantages of introducing elective studies of shorter duration within the main body of the course, there has often been an implicit assumption that the object is to enable the student to study a clinical subject, or one of the medical sciences, in depth. Certainly a student should have the opportunity to do this, and to take part in research, if he so wishes: the value of contact with research is very great and is not measured by the magnitude of the project or the importance of the results achieved. But the student should equally have the opportunity to extend the breadth of his education. Each university should make available

to students its full resources in medical and related subjects so that they may prepare themselves for developments (e.g. the use of computers) which have not yet established themselves as standard features of a medical curriculum.

220. We have satisfied ourselves that a flexible modular curriculum of the kind we have suggested, offering a wide choice of subjects, would be a practical proposition for a reasonably well equipped and organised medical school. Such a course should not make much greater demands than does the traditional course on staff and accommodation which, as we point out in paragraphs 397 and 398, will in any case have to be greatly expanded. Classes will be larger with the bigger student entry which we recommend in Chapter 7 for the medical schools of the future, but at least some of the new and optional subjects will be common to students of more than one faculty. Similarly, although timetable difficulties are likely to be great, they will probably be less acute than might be expected. Experience of optional courses in other fields suggests that each year's student intake will divide itself, in fairly constant proportions, into groups each following a well-established course arrangement and that students taking other combinations will be comparatively rare. Moreover, unless medical curricula are planned with the flexibility available through a modular system we do not see how they can be appropriate to the needs of students from differing backgrounds, and to the increasing diversity of the medical profession. The traditional rigid curriculum, well as it may have served medicine in the past, is no longer adequate.

221. We have had considerable doubt whether to put forward a specimen curriculum, because at least some people would probably regard it as a recommended course, whereas we wish above all to encourage free experimentation within the principles which we have suggested. In Appendix 8 we offer examples which should be regarded as no more than illustrations of the practicability of our proposals in terms of an actual curriculum.

222. Although subjects are shown separately in the outline curricula in Appendix 8, teaching time and the planning and conduct of all parts of the course should be in the hands of the faculty as a whole; individual departments might have a substantial control over the teaching of optional subjects, but there should always be opportunity for work which would cut across departmental boundaries. There should be no more than about two hours of formal lecturing in any one teaching day, and at least one hour should be used for seminars; the remainder of each day being taken up by practical work, demonstrations, discussions and reading. The student must be taught to use a library and explore original literature for himself. Whenever possible the teaching of each department should be concentrated into a single day, or two days, in each week, so that the staff can be freed for research and other work during the remainder of the week.

THE MEDICAL SCIENCE DEGREE

223. The award of a degree in medical science would not be an essential part of a medical course of the kind we propose; each university would decide whether such a degree should be offered. We urge, however, that a degree in medical science should be generally offered, for two important reasons. First, most students in other faculties obtain a degree after three years of study

and thereafter have the status of graduate students; this distinction will be the more irksome to medical students as the number of their contemporaries pursuing human biology courses, which will have much in common with medical courses, increases. Secondly, if a student failed for any reason to complete the full medical course he could have a qualification which would enable him to take up a career in some non-medical or paramedical field.

224. The degree given after a course of the type we have outlined would presumably be that of Bachelor of Medical Science, or perhaps Bachelor of Science if the present tendency towards discontinuing the differentiation of science degrees prevails. We think that universities would normally recognise it as an Honours degree, classified according to the standard reached by the individual student over the whole of his performance. Most universities might wish to offer a Pass degree to students whose work, although satisfactory, did not justify the award of Honours. The Honours degree of which we are speaking would not, of course, be equivalent to a specialised Honours degree in a particular subject, e.g. physiology. The few medical students who felt impelled to reach the standard of a specialised Honours degree would probably need to spend a further year devoted to the study of that subject alone. We do not regard this as an objection, however. There is no reason why the medical course should offer a short cut to a specialised science degree for which it is not intended as a preparation. The broad medical science course should be adequate to meet the non-clinical requirements of all medical students (and, with some small modification, of dental students also). The Medical Research Council and other witnesses have told us that in their opinion the traditional intercalated course in, for example, biochemistry or physiology, can no longer provide even a good student with a complete preparation for an academic career in these subjects. A student aiming at such a career would not normally rest content with a first degree but would go on to take a higher degree in the subject of his main interest.

THE CLINICAL STAGE

225. The clinical part of the undergraduate medical course had formerly to be used for vocational training; this allowed no opportunity to extend the benefits of the student's preceding education in the sciences basic to medicine. The situation was improved in 1953 (see para. 60) by legislation debarring medical graduates from registration until they had held approved house appointments for a year. The recommendations we have made in Chapter 3 for postgraduate education and training should, if accepted, release medical schools from any remaining thought that they need produce a graduate fit to practise medicine independently; the undergraduate clinical years can then be regarded solely as part of a basic university education in medicine. This is one of the main arguments which has persuaded us, on educational grounds, to recommend (see para. 206) that the minimum period of clinical studies be reduced.

226. The aims of the clinical stage of the undergraduate course should be:

to demonstrate the application of the medical and behavioural sciences to the practice of medicine, thus giving the student an appreciation of the biological, environmental and personal factors which underlie structural disease and disturbances of function;

to review the phenomena of disease and the present state of knowledge about their prevention and management, and to indicate the direction of likely advances in the future;

to provide a sound basis in clinical methodology, which should include not only the medical interview and clinical examination but also the use and interpretation of the many physical and chemical procedures which are essential parts of routine clinical investigation and which must be adequately covered to ensure future clinical competance;

to introduce the student to the principles on which treatment is based;

to encourage a holistic attitude towards patients and avoid the increasing danger of considering them as cases rather than persons;

to ensure that the student has assimilated the ethos of medicine.

227. Objectives such as these have been hard to achieve hitherto, particularly because the curriculum has attempted too much and has therefore become unnecessarily diverse, congested and disconnected. Moreover, the examination system has tended to test the student's capacity to reproduce material learned from textbooks or lectures rather than his capacity to discriminate. The need for exposing medical students separately to each one of an increasing number of clinical specialties can be removed by adequate postgraduate professional training such as we have proposed in Chapter 3; the clinical curriculum can then be selective, as it should be. The examination system must be radically altered (our proposals on this are put forward in paras. 283–286), so that the student is himself encouraged to bring together and integrate the instruction he receives and will come to visualise the patient as a whole, not merely as a collection of systems. Collaboration in teaching will, however, be the most effective way of removing some of the problems which have arisen from the allocation of time to each discipline separately, the failure to present health and disease in man as a whole, and the excessive use of the formal lecture and of the old-fashioned type of " open ward round ". The distinction between " medical cases " and " surgical cases " exists only for convenience of treatment and does not apply in the study of disease. Experience has shown that when surgeons and physicians work closely in partnership spectacular advances can be made; this partnership has important lessons for the medical student in emphasising the unity of clinical method and medical knowledge and in demonstrating that the practice of medicine today has become a matter of team-work. Some collaborative methods of teaching such as the clinico-pathological conference, the clinico-pharmacological conference and the seminar are well established; newer methods include integrated teaching, topic teaching and group clinical teaching.

228. Much interest has been aroused by the pioneering work of a number of United States universities (notably Western Reserve University) on the integration of medical courses, and recently experiments in this field have been introduced at several British medical schools. In these experiments the clinical course is integrated in the sense that the student, already introduced to the medical and behavioural sciences in his earlier years of study, has an opportunity to meet them again in relation to specific clinical problems and in the light of all the relevant clinical investigations. Thus, when he is studying heart disease the student will be able to revise and add to his knowledge of the

anatomy of the heart and the physiology of cardiac movements, along with the pathology, the clinical features, the cardiography, the catheter studies, the radiological investigation and perhaps the surgical operation. In this way, and to a lesser extent by topic teaching, the most obscure and difficult problems of the preclinical subjects can be given a real significance. The integrated approach to medical education has obvious advantages: it helps the student to understand the relevance, to his objective of becoming a doctor, of all he has to learn; it breaks down the artificial barriers still existing between medicine, surgery and other related disciplines; it provokes thought on new teaching methods, for integration implies full use of interdepartmental teaching of every kind and of the widest variety of methods; it requires staff, when necessary, to defend their views against those of their colleagues in front of students, and this in itself promotes an atmosphere of critical curiosity; members of the integrated teaching team become increasingly aware of the educational objectives and methods of the medical school; time is saved by the reduction of unnecessary repetition. The system is admittedly expensive in staff time and could be difficult to implement in medical schools in which consultant teachers, who have much to offer, are heavily committed outside the teaching centre: we recommend in Chapter 10, however, that Consultant teachers in major specialties should be appointed on the basis of at least eight half-day sessions a week, and should be given facilities for " geographically full-time " service. The extent to which, and the form in which, integrated teaching is introduced must be decided by each medical school. The planning of integrated teaching is far from easy, but the planning of medical education need not and cannot any longer be left to individual heads of departments: each medical school will require a comprehensive educational policy planned and continuously reviewed by the interdepartmental committee of teachers to which we refer in paragraph 208.

229. Group teaching has a particular place at ward level where the patient, the best focus for integration, is studied. In this form of teaching the students, instead of spending a period in, say, a surgical unit followed by a similar period in a medical unit, are attached in small numbers to groups of teachers. Such a group might include a surgeon, a physician, a pathologist, a radiologist (undergraduates should always be taught radiology by a specialist in this subject), a general practitioner and a psychiatrist, and be supplemented as necessary by others (for example, a dermatologist, a specialist in geriatrics, an ophthalmologist, or a venereologist). The aim of the teaching group is to ensure that the students are properly educated in the fundamentals of clinical methodology and see a wide range of clinical and investigative work during a part or the whole of the clinical stage.

230. These various forms of formally organised teaching will not by themselves be sufficient as an introduction to the care of patients. A special feature of medical education in Britain, particularly developed in London, has been clinical clerking, the attachment of a small group of students to a " firm " so that they may learn by sharing in the day-to-day care of patients over the whole period of admission. Although students can no longer play as important a part in medical care as they did in the past this system of attachment to and regular attendance upon particular patients, as members of the team responsible for them, is still most valuable. It offers opportunities,

especially in regard to the inculcation of attitudes, that cannot be so well provided in any other way. It can be applied equally successfully to outpatient departments, of which more use should be made to allow students to share in the care of patients, and less for demonstration purposes. Clinical clerking can be interposed between periods of integrated teaching or continued synchronously with it, but there is special value in an intensive, even if short, period of clerking during which the student is free of other commitments. The principles of group clinical teaching can be effectively applied to clerking.

231. We recommend that the clinical stage contain an elective period of, say, ten weeks. This is not a new proposal, but the value of elective periods has tended to be greatly reduced because they are often followed by major examinations. The changes which we envisage in the examination system (paras. 283 and 284) will free the elective period from this disadvantage and allow it to become a valuable educational experience. The student should be able to choose from a wide variety of elective topics, subject to the approval of the teaching committee (see para. 208).

232. Group teaching and the various forms of interdepartmental teaching described above, together with clinical clerking, should give the student a broad coverage of medicine in its widest sense by the time he graduates, and should remove the artificial distinctions between " medicine " and " surgery ". Specialists in gynaecology, ophthalmology, otorhinolaryngology, radiology, radiotherapy, venereal diseases and many other fields will have been represented in the course: in this way the teachers of these subjects, which we believe have their major place in postgraduate professional training, will have had an opportunity to interest students in their disciplines. Similarly general practice, psychiatry and emergency services will all have played their parts in this collaborative teaching: we think, however, that this group of subjects, with the addition of obstetrics, has a special educational value; we suggest that specified periods of time, as thought fit by each faculty of medicine, should be allotted to them although they too will have their major place in the postgraduate period. We believe that the way in which each of these subjects is treated should be left to the individual medical school; we wish to encourage a variety of approaches. For example, in relation to general practice the student will have the benefit of group teaching, might follow allotted patients from the outpatient department through the hospital and back to the home, might be attached to a general practitioner (preferably by way of a health centre) and might decide to use his elective period in this specialty. A period of residence in hospital at some stage in the undergraduate course is most valuable.

233. In discussing the preclinical stage we suggested (para. 216) that although most students would meet the medical science degree requirements by three years' continuous work others might wish to meet part of those requirements by suitable work in a clinical subject taken at a later stage. Many subjects would be suitable for this purpose, including, for example, clinical biochemistry, clinical physiology, endocrinology, metabolic disease, psychiatry, or any clinical discipline approved by the faculty of medicine: a list of approved subjects, which would vary with local facilities, should be compiled by each teaching committee (see para. 208). The sequence of topics in integrated

teaching should be arranged so that a student electing to follow this plan could leave and later rejoin the class without disadvantage; in our view this is largely a matter of timetabling.

234. Authoritarian teaching had an important place when medical knowledge was largely of an empirical nature, but when used regularly it discourages initiative, curiosity, and the growth of the student's critical faculty and his ability to learn for himself. We recommend a considerable reduction in formal teaching, but lectures are helpful in initiating the student to clinical medicine; without some facts he cannot be expected to understand or to question. Later, an occasional lecture by a distinguished teacher has special value. An expert lecturer can bring his audience to a mood of rapt attention and lead them from an elementary beginning through increasingly intricate argument to a full understanding; he can arouse their enthusiasm in a way that no writer can ever hope to do. There is also a place for occasional lectures which give the student an insight into the latest research activities of the teaching departments.

SPECIMEN OUTLINE CURRICULUM

235. Our intention has not been to set out a rigid curriculum but rather to indicate guide lines which permit flexibility; we expect and welcome experiment by individual medical schools. Nevertheless, as with the preclinical aspects of the course, we have satisfied ourselves that our recommendations can be translated into practicable timetable terms. We have seen no need to put forward a detailed timetable, which might be used to inhibit the freedom of thought and action we wish to encourage at each medical school, but the outline below shows how a two-year clinical curriculum might be planned, on the assumption that teaching takes place in 46 weeks of the year. The time allotted does not total 92 weeks and our outline implies no attempt to fill each day. The time we have left free will inevitably be occupied, however—we hope by attendance at seminars and clinico-laboratory conferences and particularly by additional work on subjects appropriate to each student's inclination and aptitude.

		Approximate duration
Integrated teaching (see para. 228). Group clinical teaching and clinical clerking.	Concurrently (2–3 hours a day for each) or in block periods.	50 weeks
Paediatrics, medical and surgical in collaboration (see para. 276). Obstetrics and gynaecology (see paras. 273–275). Psychiatry (paras. 263–272). General practice (paras. 277–279). Community medicine (paras. 280–282). Emergency practice.	Perhaps 4–8 weeks each (duration would be specified by the teaching committee).	30 weeks
Elective topic.		10 weeks

PARTICULAR SUBJECTS

236. The design of each medical school's curriculum will, of course, depend very much on the views taken in the school as to the content and aim of teaching in particular subjects. Medical schools should be left free to choose for themselves, under the guidance of the General Medical Council, the place that should be given to each subject in the light of local circumstances, national needs and developments in medicine, from time to time. Without any desire to impose a standard approach, we wish to offer some comments on certain subjects which, either because their traditional place in the medical curriculum is widely questioned or because they have not yet established a firm place in the curriculum, must be subject to a great deal of discussion when specific plans are being worked out.

ANATOMY AND PHYSIOLOGY

237. The teaching of anatomy has been a matter of controversy in recent years. Each medical school must have its own views on this, and indeed so much has been said and written in recent years against the teaching of excessive anatomical detail that we hardly need discuss this aspect of the matter. Few witnesses have maintained that the undergraduate medical student should dissect the whole body in detail: even surgeons, who have a special interest in ensuring that medical students have a thorough knowledge of the structure of the body, have assured us that the traditional preclinical emphasis on topographical detail in anatomy is not necessary at the undergraduate stage.

238. The teaching of anatomy has in fact already changed to a considerable extent. We were told by the Anatomical Society of Great Britain and Ireland that the detailed study of the structure of the human body—usually carried out mainly by laborious dissection of preserved bodies—which used to be the main activity of anatomy departments is now supplemented in all British medical schools by instruction on a wide range of topics including histology, neuro-anatomy and aspects of endocrinology, embryology and reproductive physiology as major items of the curriculum, and sometimes including also allied fields such as physical anthropology, biomechanics, genetics and cytology. Some medical schools require only one part—either head and neck, thorax and abdomen, or extremities—to be dissected in detail and make extensive use of prepared specimens and visual aids to demonstrate the structure of other parts and organs. In others, however, a great deal of dissection is still required, and we have the impression that even where drastic cuts have been made in the proportion of time allowed for anatomy in the preclinical course there has not always been a corresponding reduction in the amount of work expected of the student. Moreover, there are disturbing signs that, even in medical schools where considerable thought has been given to bringing the teaching of anatomy into line with present-day ideas, substantial duplication continues between the anatomical and physiological—and sometimes the biochemical—parts of the course. Students, who experience the instruction as it is and not necessarily as the more enlightened of their teachers wish or even believe it to be, have told us repeatedly of the frustrating and profitless duplication in the lectures they receive—sometimes

on the same day—from representatives of different departments. The repetition of important material is not always undesirable, and the presentation of a topic from different points of view may be very helpful to the student. These aims can be better achieved, however, within a framework of co-operation between departments which extends to the content of individual teaching sessions. In the view of the Anatomical Society, the present divisions between the main preclinical subjects are a matter of teaching convenience rather than of fundamental differences. We should like to see an approach to the teaching of human structure and function on a genuinely co-operative basis, and have therefore made provision in our illustrative curricula (see App. 8) for modules of instruction in " Human Anatomy and Physiology " as a combined subject, though we recognise of course that students with a special interest in one aspect rather than the other should have an opportunity to pursue it in a more intensive form.

239. The need for special dissecting rooms, and for means of storing and disposing of preserved bodies and tissue, makes the provision of accommodation for preclinical teaching in anatomy awkward and expensive. The approach suggested above, together with a reduction of dissection to the absolute minimum, might reduce the scale on which these special facilities need be provided. We think some experiments on these lines should be carried out: if successful, they would open up the possibility that a single type of general-purpose laboratory could play an important part in preclinical teaching in anatomy as well as in physiology, biochemistry and pharmacology. We are not entirely convinced of the advantages of the multi-purpose laboratories which have been introduced in some countries; unless such laboratories are associated with a radically new approach to preclinical teaching they seem likely to present as many problems—though of a different nature—as do laboratories of the traditional type.

STATISTICS

240. " The purpose of teaching statistics to medical students is not to produce statisticians, any more than the purpose of teaching biochemistry is to produce biochemists; it is to help doctors to think quantitatively. "* The teaching of statistics can contribute to the education of medical undergraduates in two main ways. First, the subject is an integral part of the logic of scientific method and can be conveniently used to introduce ideas about making and interpreting observations and about experimentation. Secondly, statistics comprises a body of techniques for the measurement and assessment of variation, used widely and increasingly in medical research on diagnostic procedures, effectiveness of treatment, development of new drugs, causative factors in disease, laboratory measurement and many other subjects. Some knowledge of the principles of the statistical approach is now necessary so that doctors can make some judgment for themselves of the validity of the claims for medical advances made in journals and other communications. Instruction in statistics is a necessary part of the process of producing a graduate who can apply a scientific outlook to his future experience.

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* Evidence of the Society for Social Medicine. *British Journal of Social and Preventive Medicine*, Oct. 1966, Vol. 20, No. 4, p. 153.

241. Medical students often find statistics difficult and are not always convinced of the value of the subject for their purposes.* Some of their difficulties are real, for the basic logic of probability assessment is often unfamilar to medical students and cannot be understood without time and thought. On the other hand unnecessary problems have sometimes been created by a sterile emphasis on algebraic and arithmetical manipulations which have little relation to the principles or practice of medical applications. The educational value of statistics can only be realised, in our view, by concentration on its function in the assessment of medical evidence. The technical mathematical apparatus of calculation must, like many other techniques, be taken on trust by most students. Teaching should not be confined to vital statistics, which in some medical schools was the only branch of the subject taught until recently. Moreover, statistics is not computing; its part in the course is not dependent on developments in the use of high-speed electronic computers for medical purposes. Such developments demand special and separate instruction. A knowledge of statistical principles will, however, be very important in framing questions to put to computers, and in interpreting the answers.

242. The length and content of the teaching to be given in statistics must be decided by each medical school. The problems which require statistical treatment should be seen by the student to arise naturally from the study of health and disease, but he cannot be introduced to more than a fraction of the applications of statistical methods in medicine and in the biological sciences; suitable opportunities occur at many points in the curriculum and much will depend on the interests of individual teachers. Instruction can perhaps best be divided into three stages. First, the basic principles of statistical logic and methods should be taught within a reasonably compact period, preferably after the student has gained a good knowledge of the medical sciences and their methods. The aim should be to introduce the ideas of measurement in medicine and the interpretation of biological observations; there are advantages in using a title which conveys this aim, rather than " statistics ". Examples should be based on human variables and drawn from other subjects which are being studied at the same time, e.g. physiology or biochemistry. The emphasis throughout should be on the meaning of results rather than on formal calculations, but experience in handling data is important in order to stress that the purpose of statistical methods is to draw quantitative conclusions from real observations. If time is available (perhaps in an optional module) some instruction can be added on the planning of experiments and surveys and on the maintenance and uses of medical records. More than half of the time devoted to basic teaching in statistics should be spent on practical and tutorial work, preferably in small groups.

243. The second stage of instruction in statistics should consist of several carefully-prepared sessions of joint teaching, mainly but not exclusively with clinical departments, spent in discussing the statistical aspects of a medical problem which comes into the curriculum of the department concerned. The statistician must collaborate closely with the staff of the other departments and must become familiar with their teaching and the medical implications of the problems discussed. Several different topics, occupying short periods,

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* See Appendix 19, Section B, III(a).

are preferable to a single extended project. Examples of possible topics are testing of drugs, adverse reactions to drugs, bio-assay, clinical signs and diagnosis, surveys of community health, social factors in disease (smoking and lung cancer or bronchitis), growth of micro-organisms, cell counts and variations in human diet.

244. The third stage should introduce the student to vital statistics, which is concerned with a particular field of medical study rather than with the general logic of quantitative assessment. The topic is best included in community medicine (see paras. 280–282) and should cover mortality and morbidity measurement, with an introduction to the life table. A short account of problems of population growth should be given, preferably in conjunction with instruction in family planning.

245. An adequately staffed department or sub-department of statistics is desirable within each medical school, but first-class medical statisticians are scarce. The teacher should have had some experience of modern research on the applications of statistics in some field of medicine. He will then not be limited in his scope either to formal arithmetical manipulations which are of no interest to the typical medical student, or to practical but out-moded techniques. If a competent teacher with such experience is found there is no need to lay down rules about whether his degree should be in medicine, mathematics, or indeed any other subject, or whether he should be located in any particular department.

BEHAVIOURAL SCIENCES

246. In 1957 the General Medical Council suggested that in the undergraduate medical course " instruction should be given in the elements of normal psychology ".* The corresponding passage in the Council's recommendations ten years later reads:

> " In the Council's view the study of human structure and function should be combined with the study of human behaviour. The Council considers that instruction should be given in those aspects of the behavioural sciences which are relevant to the study of man as an organism adapting to his social and psychological, no less than to his physical, environment. Instruction in the biological and sociological bases of human behaviour, normal emotional and intellectual growth, and the principles of learning theory should be included. "†

The difference between these two statements is evidence of an increasing concern by the Council with the contribution which the behavioural sciences should be making to medical education; it reflects a steadily growing appreciation by doctors of the importance of psychological and social factors both in illness itself and in their relationships with their patients. Many witnesses have drawn our attention to the need for systematic education and training in this field—usually with reference to general practice, but often in relation to the needs of hospital doctors of all kinds, and of course particularly as a foundation for the later training of specialists in psychiatry. Witnesses have pointed especially to the increasing frustration and dissatisfaction of many general practitioners at their inability to deal with the substantial proportion of patients whose difficulties are psychological or social in origin, and to the alleged inability of many specialists to regard the patient as a person rather than as a case of a particular disease. There can be no doubt that the teaching normally provided by British medical schools in this field is in need of great improvement.

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* Recommendations as to the Medical Curriculum, p. 10. General Medical Council, 1957.
† Recommendations as to Basic Medical Education, p. 15. General Medical Council, 1967.

247. The efforts made at present to teach the behavioural sciences during the preclinical stage are very diverse.* They vary from almost nothing to substantial courses covering a wide range of topics in normal and abnormal psychology; few schools as yet offer any organised instruction in sociology. In many instances most of the teaching is provided by psychiatrists, and in some others by non-medical staff employed in departments of psychiatry; zoologists on the one hand, and sociologists on the other, are sometimes brought in to provide some connection between the individual and his environment in nature and society; sometimes a department of social medicine will offer a review of community factors relevant to medicine, but often this department will make its contribution during the clinical stage. Students have commented repeatedly to us on the inadequacy of the teaching they get in this field. They have emphasised that instruction focused upon basic psychological functions, to the exclusion of recognisable human behaviour, is irrelevant to their interests; on the other hand, a dogmatic exposition of psycho-analytic concepts of the kind that has been encountered in some medical schools in the United States has no place in a scientifically-oriented education.

248. By and large, current teaching in the behavioural sciences to medical students is sketchy, either too lightly or too heavily influenced by clinical interests and poorly related—if at all—either to the other preclinical sciences or to normal human behaviour as experienced by the student. These defects are partly due to the relative newness of the behavioural sciences as organised disciplines, especially in British universities: departments of psychology and sociology present a wide variety of individual interests, but seem seldom to have developed to the point of being able to offer a strong comprehensive coverage of their respective fields. In psychology particularly, the approach of many academic teachers to their subject has offered little of the practical interest which is essential if it is to be attractive and useful to the medical student: in very many cases the teachers' natural wish to arrive at scientifically verifiable facts has led them to focus their attention on laboratory processes rather than on real life, and on the relative simplicity of the rat rather than on the complexities of the human being. Apart from these background difficulties, social science faculties have been put under considerable strain by the major part they have played in the general expansion of universities over the past ten years, which has given them more than enough problems of organisation and teaching within their own field without going out of their way to find others outside it. Finally, the development of these subjects in relation to medicine has been particularly hindered by the absence of a body of teachers with both a full academic training in the behavioural sciences and a qualification in medicine: by contrast, the existence in the traditional preclinical sciences of teachers with both scientific and medical qualifications has been a

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* CARSTAIRS, G. M. et al. Survey of Undergraduate Psychiatry Teaching in the United Kingdom, 1966–67. *British Journal of Psychiatry* (awaiting publication).

powerful influence in the development of the contribution of those sciences to medical education.

249. In these circumstances medical schools which take seriously the need to introduce teaching in behavioural science into their curricula have inevitably been tempted to fall back upon their own clinical staff—whose interests, naturally, lie mainly in the direction of clinical psychiatry and social medicine —or to recruit their own sociologists and psychologists who would provide for the needs of their students as the medical schools saw them. If medical schools expand on the scale we envisage later in this report, there will be further pressures for developments of this kind. The burden of teaching a large medical class cannot be taken by other faculties in their stride, and there could be proposals for building up departments of medical psychology and medical sociology within medical schools if their counterparts already established in other faculties were unable or unwilling to meet the needs of the medical student. We should regard such proposals with considerable concern. The clinical side of a medical school can often with advantage include departments or units concerned with the clinical aspects and applications of medical sciences (see para. 430), but the main teaching of any science—physical, biological or social—should be carried out in close contact with the main stream of scientific interest within the university; otherwise it is bound to be self-defeating, even if carried out on a fairly large scale. Medical schools cannot hope to provide within their own resources first-class departments in all the subjects which are now becoming recognised as desirable in the medical course; moreover, the establishment of rival departments, one teaching the general aspects of the subject and the other its medical applications, could seriously impede the general development of those subjects. Teaching in the behavioural sciences, as in the other newer subjects of the medical curriculum, must therefore in our view be a fully cooperative endeavour between the medical and other faculties involved.

250. Co-operation must be based, first, on a firm definition of the needs of the medical student, which itself must be arrived at co-operatively. The medical schools cannot hope for effective collaboration by laying down their requirements and expecting others to meet them without question. On the other hand, if, as we think must be accepted, the needs of medical schools are to be reflected in a substantial increase of staffing and other resources in other faculties, the medical schools have a right to expect that their interests should be taken fully into account in the instruction provided. There will probably be a considerable measure of common ground between the instruction they need and that generally given to students in behavioural science departments; we think that as a matter of principle the instruction given to medical students in these subjects should be of the same standard, and require the same intellectual effort—though of course within a more restricted field—as that normally offered by the departments concerned.

251. Throughout the teaching in behavioural science there should be a strong emphasis upon the methods by which data are obtained in psychology and sociology. This will demonstrate that human behaviour and social institutions can be investigated by the established methods of science; that the techniques of observation and measurement in these sciences yield data

whose reliability and validity can be systematically appraised, and that concepts and theories about human behaviour can and must be submitted to empirical verification. As in the biological sciences, the student will be taught how to evaluate evidence in this field, so that in his future reading he can distinguish between unverified assertion and theories which have been tested by systematic observations.

252. Since both psychology and sociology are large and growing subjects, the topics to be covered must be chosen carefully. In psychology, for example, special attention should be paid to the interaction of heredity and environment in the development of human personality, and to the range of individual differences in psychological functions and how these differences can be measured. Appendix 10 gives a list of topics which might appropriately be covered: in treating each of them, the teacher should give illustrations of research findings which have confirmed or modified existing explanatory theories.

253. In addition to this teaching about essentially psychological processes, psychologists should participate in some aspects of the physiology course (e.g. the neuro-endocrine system) in order to discuss the biological processes underlying emotion, memory and thinking. Similarly, psychologists can usefully contribute to instruction in pharmacology when the psychotropic drugs are being discussed.

254. All students should be taught to recognise the effect of their own behaviour upon other people and should be given some understanding of social skills, some help in developing them and some practice in their application; all this would be directly useful in the clinical part of their course as well as in later life.

255. Throughout the teaching of psychology, illustrations should be given of disturbances of the process under discussion (e.g. failure of recent memory, disturbance of mood, effects of drugs), the resources of clinical teaching departments being drawn upon for this purpose. We suggest, however, that systematic teaching in abnormal psychology, on the psychological effects of illness and on doctor–patient relationships can best be given at the clinical stage, when the student can see for himself what it is all about.

256. The method of teaching in psychology is, in our view, almost as important as its content. When classes are large there is difficulty in organising discussion groups, demonstrations and practical sessions for small numbers of students, but this kind of teaching is essential if medical students are to arrive at any real understanding and acceptance of the psychological aspects of human behaviour; the implications for staffing must be faced.

257. In the introduction of sociology, social administration and related subjects into the undergraduate medical course there are serious dangers—as there are in all disciplines—of teaching too much, too formally and too disconnectedly. The teacher should not view the medical student as a potential medical sociologist or social worker but should try, in co-operation with his colleagues, to " give the student a comprehensive understanding of man in health and in sickness and an intimate acquaintance with his physical and social environment ".*

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* Recommendations as to Basic Medical Education, p. 9. General Medical Council, 1967.

258. Three requirements seem implicit in the acceptance of this objective. The first is that students should be provided during their first year—preferably in their first and/or second terms—with a historical and comparative introduction to the medical needs of society and the role of the doctor and other health workers. Secondly, teaching and the selection of topics in sociology and related disciplines should, as far as possible, be relevant to medicine: deliberate and sustained efforts should be made to show students the relevance of social phenomena, whether treated conceptually, comparatively or historically, to the roles and functions in society of doctors and of organisations for medical care. Although students must learn how to use a library and how to read selectively in broader fields, they should not be expected to piece together fragments of knowledge, research method and techniques. The instruction provided for medical students by sociologists and social administrators should therefore be specifically adapted to the needs of these students.* Thirdly, teaching in the social aspects of medicine should, as the Goodenough Committee emphasised,† be integrated with the clinical work of the student during the undergraduate course and the intern year. The student has to be made aware in the hospital ward and in the home, as well as in the classroom, why patients and families behave as they do in situations of illness; of the social and cultural factors which influence the patients' expectations and responses; of the problems for doctor, patient and family in the management of illness and handicap in the community; of the social, ethnic, occupational and psychological forces which can hinder prevention and treatment; and of the difficulties of communication, and other problems which arise from established expectations about the way a person in a defined situation will behave, particularly in hospital. There is no single way of achieving this aim.‡ Sociologists, social workers, hospital clinicians, general practitioners, social administrators, social medicine and public health staff and others, all have an integrative contribution to make at different stages in the curriculum. Some examples of the topics which relate teaching in these fields to medical care are listed in Appendix 11, though here again there is need for much experimentation.

259. The object of instruction in sociology and related fields should be two-fold: first, to contribute to the medical student's general education by showing him that the social environment of his own upbringing is only one facet of the complex society in which he lives and will have to work; and secondly to introduce him to the methods of sociological observation and analysis, to the nature of sociological theories about rules governing group behaviour, and to empirical research designed to test such theories. In the early years of the undergraduate course the emphasis should be on basic sociological and epidemiological concepts, using illustrations which show the bearing of social factors on disease and on its prevention and cure; more detailed consideration of the medical profession itself, and of the organisation and administration of medical care can more appropriately be provided later (to some extent during professional training), possibly in association with students of social administration.

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* See MARTIN, F. M., McPHERSON, F. M., and MAYO, P. R., A Course in Psychology and Sociology for Medical Students. *Lancet*, 1967, ii, 411.

† Report of the Interdepartmental Committee on Medical Schools, pp. 169–170. H.M.S.O., 1944.

‡ Evidence from the Society for Social Medicine (see footnote on p. 102 above) and from others.

260. There are certain matters of general social interest on which, to quote from evidence we have received, " the doctor is still considered to be an 'oracle' and the student should recognise the responsibility this entails ". We do not think medical education should encourage the doctor to assume an authority beyond that implied by his profession or his responsibilities as a citizen. We recognise, however, that there are many important matters of moral and social controversy in which doctors inevitably become involved: abortion, drug addiction and artificial prolongation of life are examples. No doctor, however remote from clinical practice, can detach himself entirely from such questions and we agree that the student needs help in preparing to deal with them. To some extent, of course, the answer lies in the process of general education through which every university student must pass: his constant interaction with other young people of different backgrounds, beliefs and aspirations is in itself a means of developing a personal philosophy which will enable him to deal with these issues. We hope that the broader course of undergraduate education that we recommend will help by bringing the medical student into close contact with his contemporaries and seniors in other fields, in place of the segregation characteristic of some medical schools hitherto. Whatever his philosophy, it should of course be based on an informed understanding of the facts of the situation; this is more important for medical students than for many others, since they will often find themselves in later life in a position of having to stand by their beliefs publicly in the face of ignorant and irrational pressures. The instruction in psychology, sociology and social medicine that we suggest will in our view provide as much in this respect as can reasonably be expected: the medical course cannot in itself do more than make available the facts on which the student must form his own moral and social judgments. Advocates of particular views should make their own arrangements to put their ideas before the student; we have no reason to think that they are denied adequate opportunity of doing so.

SEX EDUCATION

261. Many medical schools still offer little or no instruction about sexual behaviour and its disorders. This is a serious omission, and we see no reason why it should not be immediately rectified. There are two aspects of sex education in medical schools. The first arises from the need to dispel individual ignorance and misunderstanding among medical students, as among other university students and indeed all young people. Some member of the staff, perhaps a member of the student health staff, should accept the duty of giving instruction of this kind. The second aspect of sex education applies specifically to medical students because doctors are frequently consulted about problems of sexual development in childhood and adolescence, about sexual difficulties in marriage, and about sexual deviation. Particularly when there is very widespread public discussion of these matters, doctors should be able to treat them with informed understanding. The biological aspects of sex and reproduction can appropriately be included in the teaching of human anatomy and physiology; likewise, in the teaching of behavioural science, consideration should be given to normal sexual development and the interpersonal and social aspects of sexual behaviour.

262. The treatment of major sexual deviations must remain the concern of the specialist in this field, but every doctor is likely to meet with occasions

when he can detect, and may be able to relieve, a patient's anxiety about real or imagined sexual abnormality. An important part of clinical education in this field lies in the future doctor's learning how to help his patients to overcome the embarrassment which often makes it difficult for them to disclose their sexual problems. The doctor can help them in this respect only when he has overcome his own embarrassment; the discussion of case material in small mixed student groups can be very useful for this purpose. Helpful contributions on the clinical aspects of sexual behaviour may be made during teaching in gynaecology, general practice and psychiatry.

PSYCHIATRY

263. We have repeatedly emphasised that the object of the undergraduate medical course is education and not vocational training; any doctor who remains ignorant of human psychology (both normal and abnormal) must be considered ill-educated, however thoroughly he may be trained in his chosen specialty, because this subject permeates the whole of medical practice. We have been dismayed to find how inadequate is the present provision for the teaching of psychiatry in most undergraduate medical schools* and we think every effort should now be made to remedy this (see para. 126). Every undergraduate medical school should have a chair of psychiatry, and its associated hospitals should have the facilities and staff needed for a full range of teaching in this subject.†

264. In the past students have experienced considerable difficulty over their instruction in psychiatry. Each major subject of the curriculum has required them to recognise new phenomena and to acquire a new vocabulary; but the pattern of objective observation, and more or less precise quantitative measurement, which together make possible an experimental verification of scientific hypotheses, has consistently been present. In contrast, many of the phenomena of psychiatry—such as observations of patients' behaviour—are less concrete and not easily quantified; in place of single preponderant causes for disordered function, there are multiple aetiological factors whose respective contributions have to be assessed in terms of statistical probability. Above all, there is something disquieting about the concepts of psychological determinism and the predictability of human behaviour. Determinism of human behaviour is much less easy to accept than determinism in the physical sciences. These concepts challenge the religious beliefs of some students and the *amour-propre* of most. Perhaps the most striking novelty, however, lies in the apparent lack of objectivity of this subject, an aspect which seems even more disconcerting when students realise that psychiatry is concerned not only with the interpersonal relationships of patients and their relatives, but also with the emotional interactions between the observer himself and the person with whom he is dealing. Students find their own feelings and attitudes exposed to critical examination; unless they realise that this is a necessary part of the process of acquiring psychological insight they are apt to react against it—as earlier generations of doctors have done—as an unwarranted invasion of their privacy.

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* CARSTAIRS, G. M. et al., op. cit.

† See the Report of the Central Health Services Council for the year ended 31st December, 1966, pp. 5–8. H.M.S.O., 1967.

265. We hope that more adequate instruction in the behavioural sciences (see paras. 246–259) will have introduced future students to the phenomena of human behaviour, and to the biological, psychological and social factors which influence it. They should be taught that although the study of behaviour employs methods different from those of the natural sciences, its aim is essentially the same: namely to identify regularities in the phenomena observed, to advance explanatory hypotheses and to test these hypotheses by experiment, and by controlled clinical observations.

266. The teaching of child psychiatry, which includes specific reference to mental subnormality, can appropriately be given before that of adult psychiatry, in the context of paediatrics, provided there is a proper working relationship with the physicians (see para. 276). It can make a very important contribution to the students' general medical education, because it gives them an opportunity to see for themselves the processes of personality development and family interactions which have been described in their behavioural science teaching. Because the child's level of accomplishment, and his psychiatric symptoms, are alike so clearly related to his relationship with his parents, this field of study provides a suitable illustration of the concepts of dynamic psychiatry. This confrontation more often brings the student inescapably face to face with his own emotional involvement with patients and with their families than does any other part of the medical course, and this alone makes it a significant part of his training. It also enables the student to see for himself:

(a) the important role which the doctor can play in detecting and remedying instances of complex family pathology, both medical and psychiatric, and

(b) the need for teamwork by the doctor in close liaison with social and welfare services.

This learning can profitably be applied in the management of adult medical patients as well as of those with overtly psychiatric disorders.

267. The most important practical skill which the student has to learn during his clinical instruction in psychiatry is the use of the interview as a technique of inquiry. " Taking the history " forms part of every student's introduction to clinical methods: but there is a great deal more to this than simply asking a series of prescribed questions and checking the accuracy of the answers. Students must be aware of the factors which impede or distort communication, factors such as limitations of vocabulary, cultural attitudes and social prejudices and, above all, anxiety: students should learn at an early stage to recognise and overcome their own anxieties, as well as those of their patients, when frightening or embarrassing topics have to be discussed. Because an appreciation of the patient's mental state forms an important element in the assessment of many physically ill patients, as well as of those with predominantly psychiatric disorders, psychiatrists should contribute teaching on interview methods, and examination of the mental state, as part of the students' introduction to clinical work.

268. During their clinical instruction in general medical wards and outpatient clinics students will meet many patients whose symptoms are partly,

if not wholly, attributable to emotional disturbances. The students' attention may be drawn to these aspects by the physician but it would be to their advantage to have regular teaching in which a psychiatrist discusses the nature and significance of emotional factors in the timing, intensity and even the nature of symptoms conventionally regarded as purely medical.

269. Systematic teaching in psychiatry should review the phenomena of the neuroses, the personality disorders (including sexual deviations, alcoholism and other addictions), psychosomatic illnesses and the organic and functional psychoses, and give a critical appraisal of the present stage of knowledge about each of these conditions. At the same time the student should have an opportunity of learning the role of other members of the treatment team—the clinical psychologists, psychiatric nurses and social workers—and should be shown how local authority and other social agencies contribute to the treatment of psychiatric patients in the community.

270. Seminar instruction is of particular importance in psychiatry because through observation and discussion of each other's performance students are helped to see how their own anxieties can distort their perception of a patient's disturbed behaviour. The closed-circuit television camera, with videotape playback, has proved invaluable in facilitating this kind of learning. Without attempting to lay down any rigid ruling, we suggest that about 60 hours should be divided between formal lectures and lecture-demonstrations, the lecture-demonstrations (including film and videotape) occupying more than half of this time. Students should have 15–20 small-group seminar sessions in which to present cases and discuss topics arising in the formal course.

271. The clerkship should consist of full-time participation in the work of a clinical firm, for a period of at least one month but preferably longer, for two reasons. First, students report that initially they have to overcome considerable anxieties themselves, because of their unfamiliarity with emotionally disturbed patients; only after the first three or four weeks do they begin to feel able to contribute effectively to the work of the team. Second, psychiatric illnesses tend to evolve relatively slowly, even where the prognosis is good: weeks rather than days are required in order to observe significant changes in the patient's condition. Hence a clerkship which involved daily part-time attendance at the psychiatric ward for six to twelve weeks would be even more rewarding than a shorter full-time clerkship.

272. In summary, clinical psychiatry in the undergraduate course should have the following aims:

(a) to make the student aware of the important influence which a patient's mental and emotional state may have on his physical well-being and his practical abilities; and to indicate the biological, environmental and personal factors which underly mental and emotional distrubances;

(b) to impart the technique of interviewing a patient, particularly in taking the psychiatric history and assessing the patient's mental state;

(c) to review the phenomena of psychiatric illnesses, and the present state of knowledge about their aetiology;

(d) to give the student some understanding, as a participant-observer, of the organisation and conduct of treatment in the psychiatric service.

OBSTETRICS, GYNAECOLOGY AND PAEDIATRICS

273. The present undergraduate course includes, in obstetrics, a period of residence in hospital during which the student undertakes the conduct of deliveries under supervision. Most students find this a valuable part of their clinical education. They value the sense of responsibility for caring for the mother and her child at a significant moment in their lives. They can acquire new skills, not only in the conduct of the delivery but in local analgesia and suturing. The period of residence in the maternity unit should be retained so that the student can get a proper appraisal of practical obstetrics and can care for his patients throughout labour and not merely at the time of delivery. A thorough grounding in the principles of antenatal and postnatal care is also essential. This will include study of the effects of pregnancy on disease and of disease on pregnancy. The student should learn something of preparation for childbirth and parenthood and of the general principles of human reproduction. The psychological aspects of pregnancy, labour and the puerperium should be studied. The undergraduate student can be expected to learn only the general principles of obstetrics: practical experience of abnormal obstetrics is more properly acquired after registration when the student will have learned to care for patients and deal with emergencies.

274. The postnatal clinic offers a good introduction to the study of gynaecology. Modern gynaecology is concerned with much more than the surgery of the genital tract. It includes the care of women of all ages. Further instruction should be given on the physiology, including the endocrinology, of the reproductive organs. The student must learn how to examine the pelvis and to carry out investigations such as cervical cytology. The operating theatre is a good place to learn methods of examination and to see the commoner diseases, although details of gynaecological surgery are a matter for postgraduate instruction.

275. Students must learn about problems of fertility and infertility as they affect the individual and the community. There should be a family planning clinic in every teaching unit. Students should also attend the clinics for marital problems which are held jointly by departments of psychiatry and gynaecology in some hospitals and should be extended.

276. A university department of paediatrics, headed by a Professor with responsibility for co-ordinating the teaching of all departments concerned in this subject, should be established in every medical school. Teaching on the newborn should be given in the maternity unit and should include instruction on foetal development and growth, on the management of the normal and premature infant, infant feeding and the diseases and disorders of the newborn. Later the student should study the child in his home and school environment and be made aware of the services provided by local authorities and others for the care of children. He should be made familiar with the growth and development of the normal child and with immunisation procedures. Diseases and disorders of childhood will be studied in the outpatient clinics and wards of the hospital. An introduction to child psychiatry, including the study of mental subnormality, should also be given at this stage (see para. 266)

Chapter 4

GENERAL PRACTICE

277. We think that every undergraduate medical student should be given an insight into general practice. In the past, undergraduate clinical teaching has been based almost entirely on patients referred or admitted to hospital and only recently has an attempt been made to provide some introduction to the wider problems of sickness in the community (see para. 280). The medical student should understand that patients seen in teaching hospitals represent a highly selected group and that an overwhelming majority of those seeking medical attention are treated in general practice without reference to hospital. In addition to the serious conditions which are often first seen by the general practitioner, many common infections are nowadays seen only in the home and patients with emotional disturbances and minor psycho-neurotic illnesses usually go no further than the general practitioner's surgery. Certain aspects of medicine, such as domiciliary care of the elderly and the chronic sick, which are becoming increasingly important are best taught in the context of general practice; students should also learn techniques of preventive inoculation. The student must be given an opportunity to see for himself the impact of illness and death on the family, and to learn how the general practitioner meets the clinical, personal and social problems involved. He should see patients presenting new symptoms to the doctor for the first time, and learn how decisions have to be made at this stage. Moreover, he should see how the doctor-patient relationship often differs in general practice from that in the hospital. Students should be able to visit patients in their homes more easily than they do now, although this practice is already more common than many witnesses appear to have realised.

278. The undergraduate medical student should, in our view, learn about general practice not as a preliminary to training for a career in that field but as an educational experience whose purpose is to give every student some understanding of problems which are of major importance in themselves and should not be thought of as variants or minor subdivisions of the problems raised in hospital practice. The aim of the teaching should be to afford the student some insight into the nature of the problems and opportunities in general practice. No department in the medical school is ideally fitted to provide the necessary teaching. Departments of social medicine or community medicine (see paras. 280–282) may provide a suitable environment, but there should always be strong links with the department of medicine. Some medical schools have appointed Professors or Lecturers in general practice; we think that universities should offer senior academic appointments in this field, and that general practitioners taking part in the teaching of medical students should be properly paid and given university status appropriate to their standing as teachers and contributors to research; the possibility of such university appointments, with the additional financial reward they would carry, should increase the attraction of general practice for good doctors.

279. In some medical schools undergraduate students are attached for a few weeks to selected general practitioners, sitting in at their surgeries and accompanying them on visits; additional time may be spent in this way in an elective period. We think (see Chapter 2) that the future will see an extensive development of health centres and group practices in close association with hospitals; when they are situated near a medical school or a university teaching hospital

they should certainly contribute to undergraduate education, especially when they provide an example of teamwork between doctors and the related social services. We do not wish to lay down in detail any particular scheme and would encourage universities to experiment with different approaches. A series of formal lectures on the subject of general practice would seem particularly inappropriate; much more can be accomplished by arranging that the student meets family doctors either on an individual basis or in small informal groups.

COMMUNITY MEDICINE

280. We have explained in para. 133 what we mean by community medicine; the term as we use it includes much work done in university departments of social and preventive medicine and public health, as well as some activities often found in other departments. In our view, undergraduate medical education should include some study of this field. Students should be acquainted with the means of providing health services for the whole population, and with the related social and economic problems; this involves an appreciation of the epidemiology of disease and of the contributions that are made by the hospital, general practice, local authority and other services. Instruction in general practice (see paras. 277–279) provides a suitable opportunity for introducing the student to some aspects of social and preventive medicine, but does not in our view offer a sufficiently broad approach: we think there is more advantage in the establishment of a department or division of community medicine which would concern itself with all aspects of the subject. An important function of the department of community medicine would be to develop close relations between those working in all the branches of the health services; at present the only well-established link represented in the medical school is that between part-time Consultant teachers and general practitioners. The department of community medicine should encourage experimentation in the provision and organisation of health services. It should also contain sections dealing with epidemiology, statistics and computers, preventive medicine and rehabilitation.

281. We have noted with great interest the Report on Departments of Social and Preventive Medicine published in 1966 by the Royal College of Physicians, and we endorse generally the views of the Society for Social Medicine* as to the place of the subject in the undergraduate medical course. The Goodenough Committee took the view, more than twenty years ago, that "the ideas of social medicine must permeate the whole of medical education ".† This aim has been partly achieved: the social aspects of individual cases are now generally recognised to be the concern of every clinical teacher. But the community background of the individual case is still inadequately provided for in the undergraduate course. The problem of linking the two aspects together, and particularly of relating the preclinical to the clinical aspects, is complex.

282. From the educational point of view the department of community medicine should have an influence throughout the undergraduate medical period (see para. 258). The department could offer instruction during the preclinical stage in the broader aspects of community health and in the means

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* See the footnote on p. 102 above.

† Report, p. 168.

of providing medical care, with reference to problems both in this country and in other parts of the world. In this way the department might well provide a bridge between the social and behavioural sciences, statistics and population genetics on the one hand and the clinical aspects of epidemiology and medical care on the other. In terms of the flexible course structure we have suggested in paras. 213–222, the department might well be able to design a programme—extending perhaps over two or three terms—which would count for credit towards the medical science degree as well as meet some of the requirements of the clinical stage.

EXAMINATIONS

283. A course based on the principles outlined above would have no place for the kind of examination which has traditionally dominated the medical course, particularly in the preclinical stage. Some medical schools, with the encouragement of the General Medical Council, have gone some way towards lessening the impact of the " 2nd M.B. " by spreading their preclinical examinations over a period of a year or more; the modular course we have proposed above would imply an extension of this practice to the logical conclusion of assessing the student's performance in each subject as it was studied. We hope the assessment would take fully into account the industry and understanding shown by the student throughout his work in the subject, and not be based solely on a formal test at its completion. The medical science degree " examination " would then consist mainly of a careful review of the student's achievement, as shown by frequent reports or minor examinations, in each module he had taken. These assessments could be supplemented by an additional final test if this were needed to resolve any doubts about the appropriate class of degree.

284. The same principle should apply to the award of the degree in medicine. The student must meet the formal requirements of a licensing body for the purpose of the Medical Acts, but when the licensing body is a university we see no reason why its requirements should not be interpreted in terms of an assessment built up from periodic reports on the student's performance, based where appropriate on written, oral or practical tests, and completed by a comprehensive review at the end of the course.

285. A reform of examinations in the medical course is required, we think, quite independently of the changes we have proposed in the structure of the course. The present methods of assessment are widely recognised as unreliable and otherwise unsatisfactory. We think an appropriate organisation, closely in touch with the development of medical education as a whole, should be charged with the responsibility of studying and improving methods of assessment in medical education, and perhaps of providing a service to universities and postgraduate training bodies (see para. 569) on the lines of that offered in the United States of America by the National Board of Medical Examiners.

286. One of the great advantages of the recommended new approach to assessment is that students would be kept constantly aware of their progress and would not feel obliged, as many now do, to check their readiness for the final examination by entering for an external qualifying examination, such

as that for the Conjoint Diploma of the Royal Colleges of Physicians and Surgeons. One of the chief virtues claimed for these and similar examinations is their independence of the student's university teachers. We think, however, that assessments which are carried out, like these, in isolation from the course of study that has been followed by the candidate, and which are based on his performance on a single occasion rather than on his work over the whole course, are unreliable and anachronistic. Many medical schools in Britain strongly discourage their students from entering for such examinations before the end of the degree course, because the student cannot devote himself as he should to his university work if he is simultaneously preparing for an unrelated examination. We do not think the standard of university medical degree requirements is so high that any medical student need invest time and effort in working for an alternative qualification as a form of insurance against failure to get a degree. In recent years over 500 candidates annually from British medical schools have been awarded such non-university qualifications,* but our enquiries have shown that the great majority of medical students at British universities have passed their final degree examination at the first attempt,† and that of the 5,312 who obtained a " registrable primary qualification " in the three academic years from 1962 to 1965, only 235 (less than 5%) had to rely solely upon a non-university qualification for admission to the Medical Register.‡ Had the non-university diplomas not been available the number who would have lacked a registrable qualification might have been even lower than the above figures imply, because the candidates would have worked more single-mindedly; some at least might have worked harder. We make no comment on the standard of the non-university diploma examinations: the General Medical Council is the appropriate body to decide whether their standard is high enough to warrant admission to the Medical Register. Some means must be provided whereby doctors educated overseas can obtain a British registrable qualification without repeating the whole or large parts of the undergraduate course. Dentists seeking a medical qualification, with a view to Consultant appointments in oral surgery, have also been accustomed to rely upon diploma examinations in order to avoid repeating a large part of the undergraduate course; we think they should be allowed to continue to do so until suitable arrangements are made in the university course to meet their needs. Subject to this reservation, we think that medical students at British universities should not be allowed to enter for non-university qualifying examinations until they have completed the medical degree course.

PATIENTS AND TEACHING

287. Clinical education would be impossible without the cooperation of patients in two main ways. During his periods of " clerkship " the individual clinical student, usually as a junior member of the firm or unit responsible for a group of patients, is expected to visit his patients regularly; he thus learns how to obtain information from sick people by history-taking and clinical examination. No teacher is usually present in this work, the patient's

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* Almost all these students took the Conjoint Diploma of the Royal College of Physicians of London and the Royal College of Surgeons of England (see Appendix 9, Table 5).

† See Appendix 9, Table 6.

‡ See Appendix 9, Table 4.

contribution to which is of the greatest value and is possibly more demanding than any other he may make to medical education. He puts himself at the disposal of an additional investigator, who is at first shy, slow and unskilled. Patients rarely complain about this, however. Many welcome an opportunity for unhurried discussion with a young person who clearly has no responsibility for making unpleasant decisions concerning their future and who may often obtain additional diagnostic information of considerable value. Many find that the experience is a relief from the boredom of otherwise unoccupied time.

288. The second way in which patients contribute to medical education is by providing examples to illustrate teaching. Experience has shown that many private patients are no less willing to contribute in this way than are the majority of National Health Service patients. Open ward rounds are still conducted by some clinical teachers with retinues of juniors and students, although this is now widely recognised to be a poor method of education, repugnant to many patients and incompatible with the best medical care. Out-patient teaching is in some departments still based on demonstrating randomly selected patients, without adequate prior consultation, to large numbers of students. Examples of these practices have been drawn to our attention by the Patients' Association and other witnesses and we do not think they are isolated instances: their influence on the attitude of students is, in our view, as unfortunate as their effect on many patients. The eradication of such practices depends on better staffing, improved teaching accommodation, a different concept of undergraduate medical education and, above all, a change in the outlook of some teachers.

289. Clinical education in Britain usually coincides with, and is to some extent a by-product of, the care of patients. This kind of teaching has made medical education much less expensive than it would otherwise have been, and has made the most effective use of the time given to medical education by distinguished clinicians who have many other important commitments; nevertheless, such teaching is often nowadays incompatible with good education and the best medical care. In future, time must be provided specifically for teaching, in addition to the time spent in caring for patients; we have made allowance for this in our recommendations concerning part-time teachers (see para. 514). Properly equipped teaching rooms should be provided, which would ensure privacy for the demonstration and for subsequent discussion. Demonstrations in open wards, corridors and waiting rooms are not only unpleasant for the patient but also incompatible with the use of laboratory measurements and tests which are increasingly recognised as an essential part of clinical teaching.

290. No student should ever be expected to undertake any procedure involving a patient (including taking a history) or his relatives, without having seen the procedure carried out by a senior. Students must therefore observe fully-trained doctors at work. They can and should do so, however, in very small numbers: the changes we have proposed in the pattern of medical education, and the changes in organisation that we propose in Chapter 10, will provide ample opportunities at all stages. Much of what was previously taught to undergraduate students must now be learned in the intern year and in the period of professional training. For example, the undergraduate student can achieve some competence in obtaining information from patients

but cannot be expected to become at all experienced in giving information to patients, or to their relatives: that is the work of later years.

291. Whenever a teaching procedure involves the demonstration of a patient's problems to a group of medical students or doctors, the patient should be consulted in advance, given a proper understanding of the situation and asked to cooperate. Every medical school and postgraduate training institution should ensure that these requirements are brought to the attention of every teacher on appointment. Students must, of course, sometimes be allowed, in groups as well as singly, to see very ill, unconscious or confused patients, young children or others who cannot be thus consulted: the decision must then be left to the discretion of the teacher. Hospital brochures sent to prospective patients should always mention the desirability of patients' contributing to medical education when needed, but such impersonal communications cannot, in our opinion, provide a sufficient explanation of what is involved. General practitioners should, when referring patients to hospital, tell them briefly about the educational functions of the hospital and the ways in which patients may be asked to help. The teacher himself should always meet the patient before teaching begins, and satisfy himself that the patient has no misapprehensions or objections.

292. Nearly all major hospitals now engage in medical education, undergraduate or postgraduate, to some extent. If our recommendations are carried out, virtually every hospital in the country will eventually become consciously involved in education or professional training of some kind. We agree with the view of the Health Departments* that no hospital, whatever its status, should confine its services to patients who undertake to contribute to medical education; we hope that this rule will be rigorously enforced.

293. We hope that every advantage will be taken of teaching methods which reduce the demands on patients to a minimum. Nevertheless, the extension and improvements of medical education that we have recommended will require the help of a greatly increased number of patients. Their cooperation cannot be assumed if medical teachers behave arrogantly towards them, as some do, and if expressions such as "the use of patients as teaching material" continue in professional use.

CONCLUSION

294. We have proposed above an undergraduate medical course with structure and objects very different from those of the traditional medical curriculum. We think, however, that our proposals are founded on principles now widely accepted and embody trends which are already clearly evident. Something like the pattern that we have suggested is already taking shape in many medical schools. Traditional arrangements can evolve into a pattern of this kind over a short period if medical schools adjust their thinking and organisation to the realities of the present and the needs of the future.

295. The traditional medical course was self-contained and was built around the unifying object of mastering all aspects of the structure and function of the human individual—an object increasingly difficult to achieve,

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* Evidence of the Ministry of Health and the Scottish Home and Health Department.

and quite impracticable in recent years. The course that we recommend is not self-contained; it would be only the first stage of preparation for a career which nowadays demands for success and satisfaction not only a university degree but also proper professional training and continuing education. Nevertheless, the proposed course has been designed as a balanced and rounded whole, flexible enough to meet the diverse interests and needs of all medical students; its unifying principle is that the student should learn about man in all his aspects, not only as a patient but also as a social being.

296. Our proposals will make severe demands on medical school staff, organisation and accommodation; we discuss some of their implications in Chapter 10. The freedom of choice which is an essential feature of our proposals will make heavy demands on the student, who will need adequate personal help and guidance in deciding on his course of study (we discuss also in Chapter 10 how this help should be provided). In order to prepare the student for the responsibilities he will have to accept on graduation, he should while still an undergraduate be given opportunities for service and responsibilities either in medicine (for example, in emergency services, intensive therapy units or in ward nursing) or in other forms of social service. Travel, in Britain or abroad, can contribute notably to a student's education and maturation; we hope that the British Medical Students' Trust will be able to maintain and extend its support of student travel.

297. We have restricted our recommendations to the essential principles which in our view must be accepted if undergraduate medical education is to provide an adequate foundation for a career in modern medicine, which will be characterised by the likelihood of continual change and development and the prospect of more scope than most other careers for the exercise of individual judgment and responsibility.

CHAPTER 5

SELECTION AND PREPARATION FOR THE MEDICAL COURSE

AIMS AND METHODS OF SELECTION

298. We have found dissatisfaction in many quarters with the basis on which applicants are selected for admission to the undergraduate medical course. Many headmasters and headmistresses believe, for example, that in at least some universities the selection of medical students is not based on clearly equitable criteria and that a disproportionate weight is given to family connections in medicine. Whether or not these beliefs are well-founded, the findings of a recent survey appear to show that the proportion of medical students drawn from the higher social classes is substantial and increasing, as is the percentage of medical students with one or more parents in the profession.* We have not gone into this question in detail; to reach any firm conclusion we should have needed comprehensive information about the characteristics not only of candidates accepted by medical schools (about whom some information is available) but also of those who were turned down, about whom very little information is at present available. In any case, no enquiry would be likely to produce clear-cut results, because there are great differences of opinion as to the characteristics that are relevant in the selection of a medical student. We discuss below (paras. 304–310) the minimum scholastic attainment that should be required of candidates for admission to the medical course, but we do not attempt to suggest any single pattern of school preparation or to determine the relative weight that should be given, for example, to academic promise and qualities of personality. There will always be differences of view on such matters, and we think there can be no possibility of reaching even a broad measure of agreement until a means has been found of relating the characteristics of the candidate to his eventual professional performance. We hope that research will in the course of time lead to the establishment of reasonably objective criteria of professional performance, valid in the many different fields and kinds of medical practice, and thereby make possible an objective evaluation of student selection. This is a long-term aspiration, however ; in the meanwhile we think as much as possible should be done to reduce misunderstandings about the present purposes of selection and to ensure that the methods used are the fairest and most efficient available for achieving whatever aims the medical school may have in mind.

299. Selection procedures in other fields, for example in the public services and in industry, have been developed greatly in the past twenty years, and medical schools will no doubt benefit from the growing appreciation of the value of these developments to universities in general. We think the officers mainly responsible for selection and admission should be expected to familiarise

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* See Appendix 19, Section AIII.

themselves with developments in selection procedures and to collaborate closely with other faculties in improving selection methods. Medical schools should not hesitate to change their methods as necessary to improve effectiveness and meet changes in needs. We think, for example, that interviews may not always be necessary if full school reports are available. Each medical school should ensure that its policy in this respect is made clear to all applicants.

300. We think that the difficulties arising from present selection processes could be reduced by closer contact between secondary schools and the medical faculties of universities. We recommend that the recent complaints about unfair operation of selection methods should be investigated jointly by the bodies representing the deans of medical faculties and the associations of headmasters and headmistresses ; we think also that some continuing national machinery is required in order to provide a means whereby medical faculties and secondary schools can reach general understanding and agreement on such matters as selection and admission requirements, and on the implications of future changes in the organisation and content of the medical course. Direct contact between prospective applicants and university medical faculties might also be helpful. We have been told that a number of medical schools arrange for visits by groups of local schoolchildren who are interested in the possibility of a medical career. General adoption of a system of open days for fifth and sixth form pupils would help greatly in developing the contact between schools and university medical faculties which is desirable in the interests of recruitment. We suggest also that representative school headmasters and headmistresses should be invited to attend occasional meetings of the Conferences of Medical School Deans : they are already, we understand, invited to certain meetings of the Committee of Vice-Chancellors and Principals.

THE ADMISSION OF WOMEN CANDIDATES

301. We have been told that women candidates often have special difficulty in gaining admission to medical schools. The Goodenough Committee recommended* over twenty years ago that a substantial proportion of students at all medical schools, perhaps one-fifth, should be women ; shortly afterwards the University Grants Committee stipulated that the proportion should not normally fall below 15%. Excluding overseas students, the proportion of medical students in Britain who are women is now about 24%. The Royal Free Hospital School of Medicine has a unique position by virtue of its feminist history ; to-day about one-half of its students are women. The proportion of women medical students varies among the other medical schools in Britain, and also from year to year. In 1966–67, for example, the proportion of women among students entering preclinical courses varied from about 11% to about 35% (see Appendix 9, Table 7). Medical schools are widely believed to apply more stringent selection criteria to women than to men and often to judge women applicants irrationally, with the result that outstanding women candidates are sometimes rejected. Headmistresses

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* Report of the Interdepartmental Committee on Medical Schools, pp. 99–100. H.M.S.O., 1944.

believe that many of their best pupils do not apply (often, it seems, on the advice of their teachers*), and that many girls whose capacities and inclinations are fitted to a career in medicine do not take the relevant science subjects in the sixth form because they believe that admission to a medical school will not be open to them on a basis of merit alone.

302. The high proportion of women now accepted in some British medical schools is an indication that the admission of women to the course raises in itself few or no serious problems. There are differences between men and women students in the reasons for wastage (health being more commonly a cause of withdrawal from the course for women†), but there is no consistent evidence of any substantial difference between the proportions of men and women failing to complete the course successfully or in the proportions who, having qualified, fail to register. The work of women medical students is widely acknowledged to be better, on average, than that of men students,‡ though this may simply reflect more stringent selection. Some problems, particularly those caused by shortage of accommodation, bear especially hardly on women medical students, but they are problems which basically are common to students in general (especially those in large cities) or at least to all medical students or to all women students.

303. As long as there are shortages both of doctors and of places in medical schools a case can be made for giving some preference to male candidates for admission. There is, as might be expected, a higher rate of " wastage " of women doctors from the profession than of their male counterparts (see para. 356) ; the shortage of doctors might be eased to some extent if a limit were imposed on the proportion of women admitted to undergraduate medical schools, provided there were enough male applicants suitable to fill all the remaining places available. In our view, however, the main criterion for admission to a university medical course should be the ability of the applicant to profit from the course and to become a good doctor. Moreover, medicine demands and deserves the best recruits it can get, irrespective of their sex. We think the imposition of an arbitrary upper limit on the number of women admitted to the medical course would imply that obstacles which at present prevent full use of the capacities of women doctors were being accepted as insurmountable : the adoption of such a defeatist attitude is, in our view, unnecessary and would have most unfortunate consequences for medicine at a time when women have increasing opportunities for entry to and advancement in other professions.

ENTRY REQUIREMENTS

304. At present all British medical schools require as a condition of admission to the preclinical course evidence of satisfactory performance either in the General Certificate of Education "A" level examinations in physics, chemistry and biology or mathematics, or in the " 1st M.B." examinations (see paras. 311 and 312). Because of differences in the system

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* See Appendix 19, Section A, II(a).
† JEFFERYS, M., et al., *Lancet*, 1965, i, 1381.
‡ See Appendix 19, Section B,IV(c)(ii).

of secondary education, the practical consequences of these requirements are different in England and Wales from what they are in Scotland.

305. In England and Wales the present requirements have led to increasing pressure on prospective students to reach "A" level standards in the specified subjects at school ; the early specialisation which this entails has been much criticised. The problem of early specialisation in schools is not, of course, confined to medicine : indeed the "A" level syllabuses in science were not designed with the particular needs of medical students in mind. Unless there are radical changes in the system of secondary education, the majority of candidates from schools in England and Wales seeking entry to the medical course will probably continue to offer "A" level passes in chemistry, physics and mathematics or biology ; nevertheless, the growing tendency to regard these as the only qualification acceptable for entry should not, we think, be accepted without question.

306. Very few pupils in Scottish schools follow the G.C.E. "A" level syllabus and the normal sixth form aim is the Scottish Higher Leaving Certificate which, while not requiring the same depth of study in individual subjects as the G.C.E., is broader in scope : pupils normally offer four or five subjects in the Scottish H.L.C. The Scottish universities, which accept the H.L.C. as an entry qualification, provide a four-year Honours course in science and usually require the medical student to do a one-year premedical course in physics, chemistry and biology, leading to the "1st M.B." examination, before entering the preclinical part of the medical course.

307. We have recommended in Chapter 4 that the medical student should be able to vary the content of his undergraduate course to some extent to suit his own interests and background, and that opportunity should be available within the course to fill gaps in his knowledge of the basic sciences. The important thing, in our view, is to state the minimum qualifications required if an applicant is to be considered a serious candidate for admission ; in other words to state the background knowledge which every student must have if he is to cope successfully with the demands of a university medical course. Individual universities will no doubt look for particular achievements or qualities beyond any suggested minima, but the nature and level of these will vary from one university to another, and probably from one time to another.

308. In view of the intellectual demands made by the study of medicine we think that prospective entrants should as an indication of their general ability be able to show a good performance in several subjects at sixth form level ; as we have said above, most candidates are likely in future, as at present, to offer three science subjects. We find difficulty in believing that any student, however brilliant, could embark on the study of biochemistry or physiology without prior knowledge of chemistry at a fairly high level. The exact level required in chemistry should be carefully considered, however, and as regards other subjects we think that in some circumstances, and especially for really able students, universities ought to consider varying the present requirements for entry to the medical course.

309. In the G.C.E. examinations the present "A" level standard in chemistry is probably higher in some aspects of the subject than is essential for embarking

on a medical course such as we have recommended. Chemistry combined with physics, on the lines of the experimental " Nuffield " physical science course, would in our view be a satisfactory preparation for the medical course and indeed might be an acceptable substitute in this context for chemistry and physics taken as separate subjects. A student with a good "A" level pass in physical science or even in chemistry as a separate subject could, we think, be accepted without having reached "A" level in physics as a separate subject or in mathematics or biology, if he had shown evidence of good learning ability and if supplementary instruction in these subjects were available either optionally in the early part of the medical course or in a special preliminary course lasting a month or two. We suggest therefore that applicants should be considered for admission to a university medical course if they offer chemistry or physical science, together with any two other academic subjects chosen from the whole range available in the G.C.E. examination, at "A" level. We should expect candidates offering no science subjects at "A" level other than chemistry or physical science to produce evidence of some basic knowledge of other relevant science subjects and mathematics ; very few candidates in the future are likely to be unable to do this.

310. We have been favourably impressed by the new " alternative" syllabus in science subjects for the Scottish H.L.C. examination. In chemistry, for example, the " alternative " syllabus seems to cover much of the ground that is essential as a basis for beginning a course in biochemistry ; its deficiencies in this respect could, we think, be remedied by minor expansion of existing university biochemistry courses. A pupil who has followed the H.L.C. " alternative " syllabus in chemistry and has achieved good passes in this subject and in physics and mathematics or biology would, we think, be able to embark on the medical course without first spending a year on premedical studies, although he might well benefit from further instruction in chemistry during his first term, as one of his optional subjects (see para. 217).

PREMEDICAL COURSES

311. Apart from the Scottish " first year " (see para. 306), a number of medical schools in England and Wales still provide one-year premedical courses for the few students whom they now accept without G.C.E. "A" level passes in chemistry, physics and biology or mathematics. The standard of the courses seems to be variable, the class size often ridiculously small and cost high in terms of the staff and resources needed. In one medical school from which we obtained details (see Chapter 8) the average expenditure necessary to bring a student successfully through the premedical course was over £1,600, apart from the student's own support. One of the main arguments presented to us for continuing these courses is that they enable a candidate who has no previous knowledge of science, but nevertheless appears likely to make a good doctor, to study medicine if he is prepared to accept a lengthening of his university course by one year. Students with this kind of background are already few and on present trends very few future university entrants will be without a knowledge of science and mathematics at least at G.C.E. " O " level, whatever subjects they may offer at "A" level.

312. If the views on entry requirements expressed in paragraphs 304–310 are accepted the need for a "1st M.B." examination will disappear. There may be

exceptional candidates whose general ability and interest in medicine can convince a medical school that they will make good students, but whose lack of science background is such that they require a full year's preparation in science before admission to the medical course. Preliminary courses of such length should perhaps be taken at a technical college rather than at a university. The only practicable way of providing them at the university appears to be either to incorporate into a large science class the few prospective medical students who have not reached university entrance standard in the subject and who are therefore bound to be at a great disadvantage, or to arrange a special course at great expense with whatever staff can be spared from other departments : neither of these alternatives appears to us to be satisfactory. We do not imply that chemists, physicists and other scientists who now undertake teaching in premedical courses in universities have no contribution to make to undergraduate medical education ; we think, however, that their contribution will be most effectively deployed in the medical course proper, in the shape of special instruction for students offering their subjects as options (see para. 217 and Appendix 8) and instruction for all medical students in aspects of these subjects which are of direct relevance to medicine.

CONCLUSION

313. The proposals that we have made in this chapter will, if adopted, increase the freedom of choice open to the prospective medical student in planning his sixth form work at school ; taken together with the proposals in the previous chapter for a broader and more flexible medical course, they will do something towards meeting the insistent demands, made by teachers and students alike, for a " broader " education. These demands are not of course unique to medical education ; their implications reach far beyond medical education and the requirements for entry to it, and we could not discuss them more extensively without departing widely from our terms of reference.

CHAPTER 6

THE NUMBER OF MEDICAL SCHOOL PLACES REQUIRED

314. In previous chapters we have been concerned essentially with the kind of education and training doctors should have : now we turn to a discussion of the numbers of men and women for whom education and training should be made available in the future ; in succeeding chapters we shall discuss the number and location of medical schools that will be needed, and the cost to the nation of meeting these requirements.

315. Manpower needs and their implications for the output of doctors from British medical schools are not specifically mentioned in our terms of reference ; we were nevertheless enjoined to consider among other things what changes may be needed in the number of medical schools in Great Britain. Moreover, the scale of the provision required is fundamental to a consideration of the form and pattern of medical education.

IMMEDIATE NEEDS

316. Our initial enquiries led us to a firm conviction that a substantial increase of output of medical graduates was required without delay. In 1944, when the population of Great Britain was 47·5 million (compared with 53·0 million in 1965), the Goodenough Committee suggested for British medical schools a total intake of about 2,500 students a year in the future.[*] When account is taken of wastage during training, and allowance made for the return of foreign students to their own countries on completion of their training, this intake would have resulted in an annual output of about 2,100 British medical graduates. In 1957 a committee appointed by the Health Departments (the Willink Committee) advised a temporary reduction in intake, in order to avoid the risk of a surplus of doctors, which the Committee thought possible;[†] subsequently the output of British medical students fell, until in 1964 only 1,500 graduated. By then a substantial shortage of doctors had appeared in some areas. In the years immediately before we were appointed these shortages had caused public and professional concern, which had increased as the impression grew that there had been a substantial loss by emigration during previous years.[‡]

317. Some efforts had already been made to remedy the situation. By short-term measures designed to make more intensive use of their main existing facilities, the medical schools had in the academic year 1965–66

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[*] Report of the Interdepartmental Committee on Medical Schools, p. 113. H.M.S.O., 1944.

[†] Report of the Committee to Consider the Future Numbers of Medical Practitioners and the Appropriate Intake of Medical Students. H.M.S.O., 1957.

[‡] *Cf, inter alia* LAFITTE, F. and SQUIRE, J. R., *Lancet*, 1960, ii, 538–542 ; HILL, K. R., *Lancet*, 1964, ii, 517–519.

increased their intake to 2,312 students of British origin.* The Government had then decided to provide the means of further short-term expansion at some schools during the next two years, and we were told that expansion at other schools would be approved as funds became available in the following two years. We understood that these measures represented, in the view of the University Grants Committee, the most that could be done to expand quickly the capacity of the existing medical schools ; the Committee told us that they saw no practical possibility of making even more intensive use of the facilities already available, or of using more extensively the resources of other faculties to supplement those of the medical schools. A new medical school was, however, to be built at Nottingham ; there was hope that building would start before the end of 1968. If students from overseas who were likely to return to their own countries after training were disregarded, the annual intake of the schools seemed likely to rise to about 2,700, so that by 1975 the output would be about 2,400. In 1975 the population will be about 56·5 million.

318. With the help of the Ministry of Health and the Scottish Home and Health Department, we first made an estimate of the number of doctors which would be required to make good future losses caused by death, retirement, overseas service and emigration, to provide for the needs of an increasing population, and to bring the numbers in general practice and the hospital service up to the desired standards (see para. 327) within a moderate period of time. In the light of the detailed assessments set out in the annex to Appendix 12, we reckoned in 1966 that a deficit of at least 10,000 doctors would have accumulated by the end of the next ten years. To meet this deficit within ten years, with provision for inevitable wastage during the undergraduate course, there would have been need for a total increase of at least 11,000 in intake over that period (i.e. an average increase of 1,100 in the annual intake) over and above the intake then envisaged over the next ten years. Account had also to be taken of whatever provision this country might wish to make for a rise in the number of places in British medical schools available to overseas students : our conclusion, after consulting the Ministry of Overseas Development, was that the annual number of these places, which had been about 150 in recent years, should at least be restored to its former level of about 200.

319. Our estimates included an allowance for some increase in the number of British doctors temporarily serving in developing countries overseas, and for the loss of several hundred doctors a year by long-term or permanent emigration to other advanced countries. Although the rate of emigration is most difficult to estimate and predict, we were satisfied that in the light of all the available evidence our estimate reflected reasonably accurately the experience of this country in recent years and, in view of the continuing demands of other countries, was a realistic forecast of the minimum loss in the following ten years. We had taken account of the likely effect of the improved terms of medical service in this country then being discussed between the Government and the profession, but we saw that increasingly systematic attempts were being made by other countries to attract doctors from Britain. We thought such efforts could well lead to an increase in emigration, especially if a worsening shortage of doctors in this country led

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* See Appendix 9, Table 2.

to added dissatisfaction in the profession : Britain was, in our view, in danger of being caught in a vicious circle unless the shortage was quickly remedied.

320. We thought that more doctors might have come from overseas and settled permanently in this country than had been previously reckoned. Some had come from Ireland and from the more advanced countries of the Commonwealth, and we thought this movement would continue. Most, however, had come from countries whose own needs were greater than ours ; we took the view that Great Britain ought not to rely on a continuing substantial contribution to its medical manpower from this source. We recognised, of course, that a period of hospital service was, and always had been, an important feature of the training of young doctors, and that this country had a continuing duty to provide postgraduate training for a substantial number of doctors from overseas ; but we thought that the current excessive reliance on the services provided by young doctors from overseas was bad for them and for their countries, and was tending to distort the staffing pattern of British hospitals.

321. We decided to examine further a number of matters on which there was considerable uncertainty, and to consider Britain's requirements for doctors in the longer term. We saw no likelihood, however, that our further studies would lead us to envisage any lower requirement than we had estimated initially : our estimates had been based on minimum needs and included, for example, no adequate allowance for the rising standard of medical service which is invariably demanded as living standards generally are improved, or for the effect on manpower of a necessary increase in the time spent by younger doctors in study and relaxation. We decided to consider very carefully the possibility of increasing the effectiveness of the country's existing number of doctors, particularly by the employment of married women practitioners as fully as possible and the greatest possible use of ancillary staff. We did not think, however, that any improvements in these respects would do more than help to meet increasing demands for medical service which we had excluded from our calculations.

322. Our initial broad review of medical manpower in 1965–66 thus led us to the inescapable conclusion that this country faced a serious shortage of doctors then and in the years to come ; even the earliest action to improve the situation could not take practical effect for a number of years, by which time a substantial further deficit would have accumulated. Moreover, our calculations could not allow for the probable consequences of leaving the situation unchanged : the advances in medical care that would have to be forgone, the widening disparity between professional ideals and public expectations on the one hand and the actualities of medical practice on the other ; and, above all, the disheartening increase in frustration and overwork. All these were bound to add to the already considerable pressures towards emigration, and to the general air of pessimism which was perhaps the greatest obstacle in the way of improving the effectiveness with which Britain's limited medical resources could be deployed. We therefore thought that we ought to

bring these conclusions to the notice of the Government, and to recommend urgent action to reduce the problem.

323. In June 1966 we therefore addressed a memorandum, reproduced as Appendix 12, to the Secretary of State for Education and Science, with copies to the Minister of Health and the Secretary of State for Scotland ; in the following month representatives of the Commission discussed the matter with the Ministers concerned. We pointed out that there were three main ways in which the output of doctors in this country could be substantially increased : by setting up new medical schools or else (which for immediate practical purposes amounted to the same thing) by drastically remodelling and expanding existing schools ; by emergency arrangements which combined the potentialities of suitable university science departments, not already associated with medical education, with the facilities of hospitals not already engaged in undergraduate teaching ; or by further marginal additions to the existing medical schools which would enable them to use their facilities even more intensively than they did already, especially at the preclinical stage. We recognised that the first two of these possibilities involved major decisions on policy and organisation on which we could not then offer considered views. Nevertheless, in view of the very long time that might be needed for making any specific arrangements, we thought that some further exploratory steps could be taken without seriously prejudicing our freedom to review all the possibilities of medical school development and, in our Report, to recommend those which after the fullest examination we thought to be the best. When we were appointed the Prime Minister had assured Parliament that our work would not stand in the way of urgent action in this field ; we were anxious to play our part in harmonising immediate requirements with long-term developments, by making our provisional advice available to the authorities concerned as action proceeded. Meanwhile, we thought that the maximum use ought to be made of the facilities of established medical schools, in so far as further expansion could be achieved quickly without any major departure from the present pattern. We acknowledged the efforts made by the University Grants Committee in investigating the possibilities of short-term expansion, and expressed our appreciation of the generous share of their limited resources which they had recently made available for medical education. We did not think, however, that the programme resulting from the Committee's recent review exhausted the possibilities of immediate useful action. In making this review, the Committee and the universities concerned had necessarily to bear in mind the needs of other subjects because medical schools were competing for a share of a limited total allocation of money for university building and consequential running expenditure ; we thought that, were additional funds to be made available specifically for expanding the preclinical facilities of medical schools, some planned developments could be accelerated and new possibilities of fruitful action would be disclosed that could not have been put forward in the earlier circumstances. In our view, the national interest required that these possibilities should be urgently investigated and exploited. A corresponding expansion of clinical teaching facilities seemed likely to present no serious difficulties, although we recognised that some expenditure would be required in this connection also.

324. We therefore recommended, in our memorandum to Ministers in 1966, that :

(a) specifically designated ("earmarked") additional funds, both capital and recurrent, should be made available to enable the earliest advantage to be taken of all worthwhile possibilities of short-term expansion at established medical schools ;

(b) with the assurance that such additional funds would be available the University Grants Committee, in cooperation with the Health Departments, should accelerate to the greatest practicable extent the implementation of those schemes of short-term expansion at existing medical schools which it had found to be feasible and should conduct an urgent review of the possibilities of further quick expansion ; and that

(c) the University Grants Committee and the Health Departments should, in consultation with us, continue to investigate the concrete possibilities of using the potentialities of additional institutions temporarily to augment the resources of medical education and to define the most promising proposals for the establishment of new permanent medical schools.

325. Early in 1967 steps were taken by the Government to bring forward the redevelopment of the medical school and main teaching hospital at Leeds, which had not been expected to begin until after 1971. In March 1967 we were asked to advise on the relative merits of other proposals for increasing medical school capacity ; we recommended strongly that one of these, the establishment of a new medical school at Southampton, should be put in hand as quickly as possible (see para. 387), and this was done. Meanwhile, we turned our attention to an assessment of the longer-term need for medical practitioners.

THE LONG-TERM NEED

326. The answers to many of the questions which we face in other chapters of this Report, e.g. the future size of medical schools, the number and location of new schools and the resources required for postgraduate training, depend to a great extent on forecasts of the number of doctors needed twenty or thirty years from now, the number of graduates needed annually from British medical schools and the number of places needed for students. Forecasts for periods as long as twenty or thirty years must inevitably be tentative and plans based on them must be flexible enough to be modified as circumstances change and as more information becomes available. We cannot, and need not, try to prepare firm and detailed estimates : a broad picture is sufficient.

327. Our examination of the need for manpower over the next ten years (see paras. 318–321) was based on requirements which could be clearly foreseen in the main branches of the National Health Service. In respect of the hospital services we were able to use reviews made by the regional boards as a result of reports published some years previously on the hospital staffing structure in England and Wales* and in Scotland.† A conservative estimate

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* Report of the Joint Working Party on Medical Staffing Structure in the Hospital Service. H.M.S.O., 1961.

† Report of the Committee on the Medical Staffing Structure in Scottish Hospitals. H.M.S.O., 1964.

of unmet needs for general practitioners was derived from the rise in recent years in the average number of patients for each principal and the fall in the supply of assistants and trainees. These procedures cannot satisfactorily be extended to a forecast covering a longer period than ten years. Changes in the pattern of medical care (discussed in Chapter 2), trends in population density and structure, and changes in the demands made by patients will inevitably alter the relative number of doctors needed in the component branches of the National Health Service. The further ahead one attempts to look, the more arbitrary and unrealistic is any attempt to estimate the number of doctors needed in any particular branch of the Service. The need for a detailed study of future requirements is reduced by the fact that many of the most important factors which determine the number of doctors required —e.g. population size, standards of living and time needed for study and leisure—affect all branches of the National Health Service to much the same extent.

328. We have approached the problem by investigating past changes in the total number of doctors working in Britain and the implications of these changes. Our assessment is based primarily on an extrapolation of broad trends which have shown themselves to be remarkably stable over a long period and should therefore provide a valid guide to the future even though deliberate policy decisions will partly replace the many uncoordinated influences which have operated in the past.

THE NUMBER OF DOCTORS IN RELATION TO THE POPULATION

329. Table 1 (p. 133) shows the size of the general population, the total number of doctors " economically active " as defined in Census reports, and the number of such doctors for each million of the population, in Britain at various dates between 1911 and 1965. The table also includes estimates for 1975, based alternatively on the number of doctors expected if plans current in mid-1966 continued unchanged and on the numbers that we think will be needed (see Appendix 12).

330. The number of doctors for each million of the population—a number which we shall henceforth for convenience call the " doctor–population quotient "—has risen steadily over the period, despite some fluctuations. An assessment of the rate of increase in the quotient over the period as a whole depends to some extent on the year taken as the starting-point for the calculation. We could have chosen a starting-point arbitrarily or, more defensibly, we could have tried to find a year which appeared to fall in a period of " normal " supply and demand ; we thought it would be more satisfactory, however, to base our approach on the remarkable regularity that could be seen in the trend throughout the period between 1911 and 1961. We saw that an extrapolation of a smooth curve approximating to this trend would pass very close to the point representing our previous estimate of likely needs in 1975 (see para. 318) ; we decided, in order to avoid unimportant but possibly confusing discrepancies between our short and long term approaches, to treat that point as firmly established. We found that if we drew through the 1975 point a curve representing a constant rate of increase of 1·25% annually, the curve would follow very closely the pattern of the values of the doctor–

TABLE 1

*Doctors and Population in Great Britain, 1911–75**

Year	*Population (millions)*	*Number of Doctors "Economically Active"*	*Doctors for each million population*
1911	40·83	26,700	654
1921	42·77	27,760	649
1931	44·80	33,390	745
1951	48·85	48,220	987
1955	49·55	53,260†	1,075
1961	51·28	59,200‡	1,154
1965	53·10	62,700§	1,181
1975	56·40‖	(a) 68,100	1,207
		(b) 78,100	1,385

* Except where otherwise stated the figures are from Census reports of the "home population" and total number of doctors occupied (whole-time or part-time) in civilian practice. They may be taken to refer to the beginning of April. The estimates and projections relate to the middle of the year. To maintain conformity with the population projections, estimated numbers of doctors from 1965 onwards include those in practice in the armed forces, whether at home or overseas.

† Estimate used by the Willink Committee.

‡ From 10% sample Census, adjusted for bias.

§ Estimated by the Commission.

‖ As projected by the Government Actuary's Department in consultation with the General Register Offices of England and Wales and of Scotland.

(*a*) Expected if medical school capacity increases as planned in mid-1966.

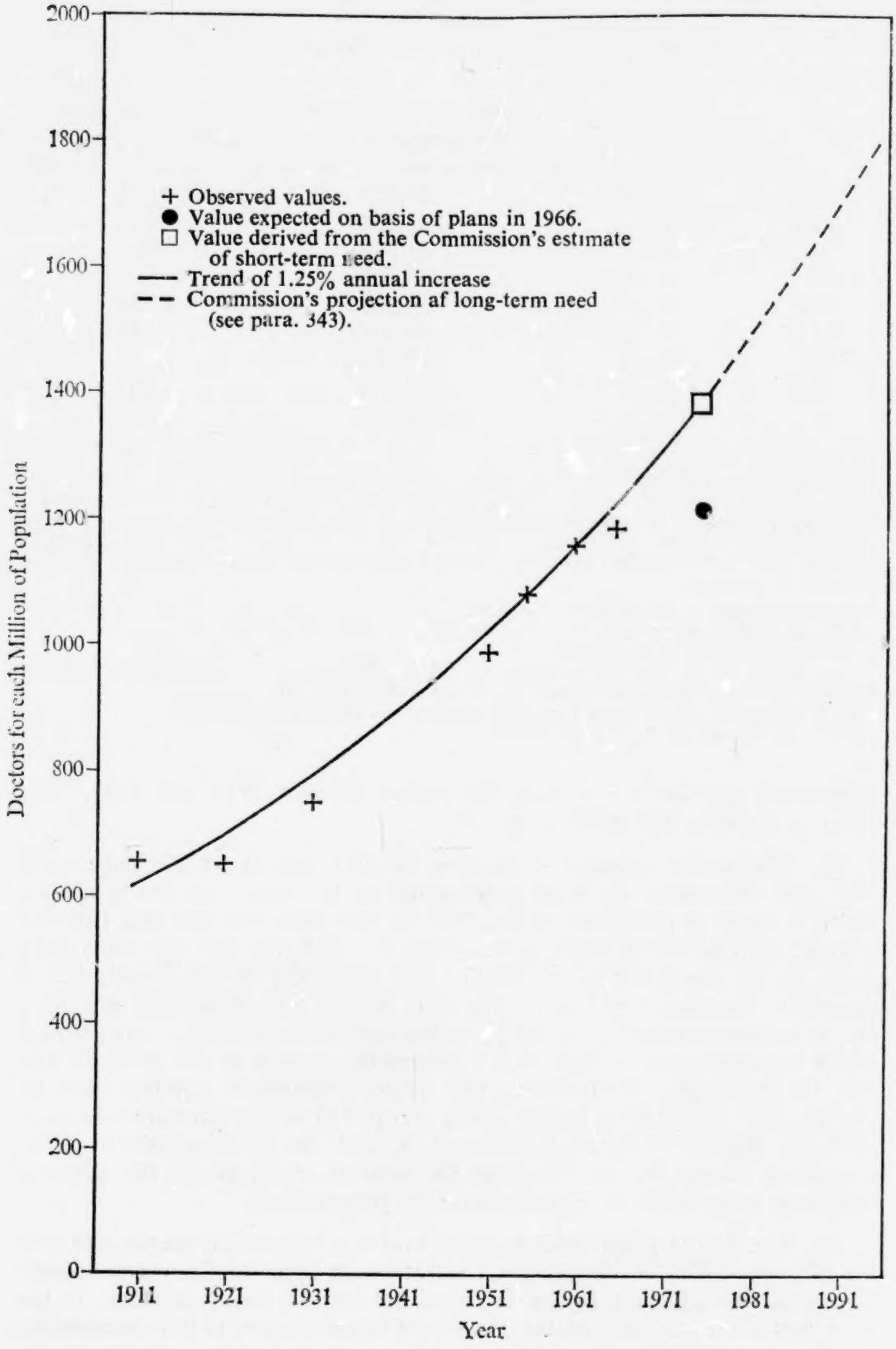
(*b*) Need assessed by the Commission.

population quotient found over the period between 1911 and 1961. The curve is shown in the graph on p. 134.

331. The doctor–population quotient in 1921 was about the same as in 1911 and was below the trend represented by the curve, no doubt at least partly because of the effects of the 1914–18 war. Between 1921 and 1931 the average annual rate of increase was close to 1·25% but not high enough to make up for the preceding shortfall : the later part of this decade was a period of economic depression. The 1941 Census was abandoned and there are no accurate statistics for the years between 1931 and 1951, a long period which included times of very varied prosperity as well as the 1939–45 war and its aftermath. Nevertheless the doctor–population quotient rose by slightly more than 1·25% a year during this period and continued to do so in 1951–61. Since 1961 there has been only a small rise in the quotient ; if we assume no change in the 1966 plans for medical school places, the quotient will be in 1975 only very slightly above the present level.

332. The doctor–population quotient rose at a remarkably steady rate over the fifty years 1911–61 despite great variations in social and economic conditions and vast advances in science, medicine and the health services. In the later part of the period, however, the rate of increase seems to have accelerated a little. Because the length of a doctor's education and training prevents supply from adjusting quickly to changes in demand, changes in the underlying demand for doctors could not be reflected in the rate of increase of the doctor–

THE DOCTOR–POPULATION QUOTIENT IN BRITAIN, 1911–1995



population quotient unless such changes were maintained for a long time. In drawing the curve shown in the graph on page 134 we have acted with caution both in assuming that the doctor–population quotient rose no more quickly towards the end of the period than at the beginning, and in keying the curve to an estimate of need in 1975 which was based on conservative assumptions independent of past trends. By 1965 the doctor–population quotient had begun to fall below the long-term trend ; this fall is consistent with the widespread claim that there are shortages of doctors both in hospitals and in general practice. If present plans for medical school capacity remain unchanged the gap between the long-term trend and the actual situation will widen greatly by 1975.

FACTORS DETERMINING THE FUTURE DEMAND FOR DOCTORS

333. In preceding paragraphs we have used the words " need " and " demand ", which are commonly accepted as denoting real features of the situation. These concepts cannot be defined quantitatively, and moreover they are always specific to a particular population at a given stage of development ; in using them we do not imply that there is some absolute or optimum level of health services which can be measured and towards which we should aim. We do not believe that the health services in Britain are close to a stage where, on the assumption that all economic and social barriers were removed, they could meet all the demands likely to be made on them ; nor do we believe that, in the period with which we are concerned, such a possibility will seriously affect the likely course of future development.

334. As we pointed out in Chapter 2, over the past fifty years rapid and continued progress in the treatment of disease and in the saving of life has not reduced the need for medical services, but has changed the nature of the need and revealed health problems which are more intractable and demand more resources. There are basic reasons for expecting similar changes in the future. If the life of a person who would previously have died in childhood from an infectious disease is saved (either by prevention or by alleviation or cure of the disease) he will, in the normal course of events, later suffer from the chronic conditions of old age. How such changes will alter the calls on medical services depends partly on patterns of mortality and morbidity and partly on the methods used to treat particular diseases. Although mortality in England and Wales has fallen steeply, the crude annual death rate has remained almost constant at 12 per thousand since the early nineteen-twenties : deaths have been postponed but not reduced in proportion to the size of the population. Available statistics are not adequate to show trends in the burden of sickness, but the pattern of change has probably been broadly similar to that of the death-rate. Since, in general, the chronic diseases of old age make a heavier demand on medical care than the briefer illnesses of youth, the changes discussed above will tend to raise the total demand for medical care, although the increased load on doctors may be partly lightened by greater and more efficient use of ancillary staff. We have no doubt that there will be notable advances in the prevention and treatment of the diseases of old age during the next twenty or thirty years, but the experience of the past suggests that improvement will be slow ; in any case, a greater expectation of life at later ages would be likely to call for the expansion of geriatric services. In Britain

and most of Western Europe over the last ten years the death-rates of men over forty-five years of age have changed little and have even shown some tendency to rise.

335. We have been told that over the past decade the United Kingdom spent a lower proportion of its current national income on health services than any other advanced country for which adequate information is available.* The relationship between health service expenditure and the health of the nation is a complex one which is affected by economic and social factors ; no clear correlation has been established between expenditure and the available indices of mortality and morbidity, but these indices are not very satisfactory for gauging the requirements of developed countries for improvements in medical care. As the prosperity of a population increases, there is pressure for a greater proportion of its income to be spent on less immediate medical needs. The weight of attention moves from death to illness, from the treatment of disease to the promotion of health. Measures of prevention such as screening for pre-disease conditions and regular medical examinations are more widely introduced. Psychiatric services are extended. We believe that such developments are desirable and will take place, provided that economic and social progress continues without serious interruption at about the same pace as in the past. On this assumption we expect the demand for expansion of the medical services to be at least as great in the next thirty years as it has been in the last. The necessarily high labour content of personal services, such as the health services, limits their potentiality for an improvement in productivity in the normal sense : as the productivity of manufacturing industry rises, therefore, an increasing proportion of total national resources has to be spent on the health services simply to maintain their standards unchanged, since the workers in these services will share in the generally rising prosperity. A substantial part of the increase in health service expenditure in recent years has been due to this fact.

336. Conclusions about future changes in the provision of health services in general do not necessarily imply corresponding changes in the number of doctors required. Even if there were no change in health service expenditure as a whole, some change might be justified in the proportion of such expenditure which was devoted to the employment of doctors. There is some evidence that improvement in the medical and nursing staffing of hospitals is, apart from greater use of drugs, the only effective means of raising hospital patient turnover, and such an improvement thus makes an important contribution to greater hospital efficiency ; but the extent to which this is a real economic gain, rather than a re-allocation of responsibility for medical care, is not clear. If we assume that the national income will grow by 3% a year, that there will be no change in the proportion of current national income spent on health services, and that about one-half of the increase in expenditure on health services will be required solely to maintain current standards (see the preceding paragraph), we can expect that the number of doctors required will rise by 1·5% a year even if the employment of doctors takes no greater share of health service resources than it does now ; if the share of those resources given to the employment of doctors were to rise, the required increase in the number of doctors might be nearer 2% a year.

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* Evidence of Professor B. Abel-Smith.

337. Changes in the structure and organisation of the health services could alter the functions and, therefore, the distribution of doctors. Recently published reports* on the organisation of medical work in hospitals imply important possibilities of saving manpower by greater efficiency. A greater use of automation may also help by giving the doctor more time for his essential responsibilities. In Chapter 2 we suggested that no sudden revolutionary change in the pattern of medical services and care would occur, but that in general practice a gradual evolution of large group practices, perhaps based on health centres, would permit greater delegation of routine work and fuller use of efficient office methods and machinery. These and other improvements in organisation and in the structure of the National Health Service should help towards meeting the demand for better and more extensive services but will not, in our view, contain it in the near future. In Chapter 3 we have stressed the urgent need for better professional training and better facilities for continued education and made recommendations about how they should be organized. These developments will make substantial demands on the time of the doctors who will be responsible for the teaching involved. Any large expansion of the intake of medical students will similarly require more manpower for teaching both at the undergraduate and, later, at the postgraduate level. As well as allowing for teaching responsibilities, we must make provision for the additional time that will be needed by doctors for study and continuing education, and for the greater leisure time that doctors, like other people, will expect to have in the future. The weekly hours worked at present by, for example, junior hospital doctors, are too long to permit the needs of education and leisure to be met. Finally, we must take into account the substantial number of doctors working in services which have little direct contact with patients, e.g. pathology, bacteriology and virology, and in research. Progress in medical technology will increase the requirement for laboratory services ; scientific research, as a whole, has probably been expanding more rapidly than medical services in recent years.

THE TOTAL NUMBER OF DOCTORS REQUIRED IN THE FUTURE

338. We believe that in view of the influences discussed in paragraphs 333–337 provision should be made for the doctor–population quotient in Britain to continue to rise at a rate no lower than in the past. Although the organisation and efficiency of doctors' work will probably improve there are clear signs of pressures the satisfaction of which could require an annual rate of growth higher than the 1·25% that has been maintained in the past. Much will depend on the speed of social and economic progress, but in our firm opinion the needs of the future will not be met by an annual growth rate of less than 1·5% in the doctor–population quotient, subject to the modification that we suggest in paragraph 343 to take account of future changes in the age-structure of the population.

339. Our calculations so far have been based on the total population without reference to the divisions within it. For our purpose the most important differences are those related to age. Over the past fifty years there have been great changes in the age-structure of the population. The proportion under fifteen years old has fallen from 31% in 1911 to 23% in 1966 ; it was

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* See the first footnote on p. 37.

even lower before the post-war increase in the birth rate. The proportion over sixty-five years old has risen steadily from a little over 5% in 1911 to about 12% in 1966. Over this period there have been changes in the demands made on medical services by a typical person of a given age, as the incidence of the infectious diseases of the young has fallen and chronic conditions have become more prominent. The information available is not adequate to show quantitatively the total effect of these changes on the doctor–population quotient, but the regularity with which the quotient has increased in the past suggests that failure to allow for such changes is not a serious shortcoming when our object is to make only a broad assessment.

340. Over the past ten years, the official estimates of future population size and structure have been much modified as the higher birth rates since 1947 have come to be accepted as a long-term feature of British demography. The expected total population has risen and the expected proportion of old people has diminished. Moreover, nearly half of the persons who are expected to be alive in 1995 have yet to be born. If eventually the actual size of the population were very different from that now forecast our prediction of the future need for doctors would be considerably affected.

341. To examine the effects of population size and age-structure on the future need for doctors we have estimated the relative amount of medical care required by each age group. For this purpose we have used a simplified version (shown in Appendix 13, Table 1) of the values arrived at, after a careful investigation, by a Swedish Royal Committee which reported in 1961.* The Swedish assessment was made in terms of cost, and is therefore not directly related to the calls on doctors' time, but changes in the latter will probably show a roughly similar pattern. The figures that we have used give more weight to the requirements of older people, and less to those of young children, than might be expected in Britain on the basis of the past incidence of sickness and comparative rates of consultation with general practitioners.† We are concerned with the future, however, and the differences in need between the young and the old, and particularly between people under and over the age of 40 or thereabouts, seem likely to become progressively greater. Moreover, for our present purpose we do not need to measure these differences very accurately : a broad description is sufficient.

342. We have examined the effect of adjusting the population figures for Britain between 1931 and 1975 on the above basis, to take account of the differences in medical care requirements implied by changes in the age-structure of the population during that period. Although such an adjustment would probably be greater than would strictly be justified (there was still a great deal of infectious illness among children in the early part of the period) the consequential change in the trend of the doctor–population quotient would be small : the annual growth rate would remain at 1·25% between 1931 and 1975, or nearly 1·5% for the period from 1951 to 1975.

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* The Needs of Medical Education and Medical Progress. Stockholm, Government Printing Office, 1961.

† See LOGAN, W. P. D., and CUSHION, A. A., Morbidity Statistics from General Practice, Vol. 1. General Register Office Studies in Medical and Population Subjects, No. 14. H.M.S.O., 1958.

343. The expected age-structure of the population in the future suggests, in the light of this analysis of the relative requirements for medical care of each age group, that the growth of medical care requirements of a given population will be lessened over the next thirty years—slightly over the next ten years and appreciably in the more distant future. Appendix 13 (Table 2) shows, for example, that the requirements of a given number of people in Britain in 1995 will be only 96·3% of the requirements of the same number of people in 1975. This probable lessening in requirements for medical care is due to an expected increase in the proportion of the population under forty years old, whose demands for medical care are lightest, and an expected decline in the proportion aged between 50 and 69 : the proportion aged 70 or more will probably rise quite considerably, but the number of people of such age will not be large. We think therefore that the number of doctors required for each million of the population after 1975 will be somewhat less than that implied by the underlying growth rate of 1·5% (see para. 338); the provision of this smaller number would call for an annual growth rate of roughly 1·3%. Estimates of future requirements, modified for age-structure, are shown in Table 2 below and in the graph on page 134.

TABLE 2

Number of Doctors Required Between 1975 and 1995 to Maintain the Growth Rate thought desirable by the Commission in the Doctor–Population Quotient

Year	*Population (millions)*	*Doctors Required for each million population*	*Number of Doctors Required*
1975	56·4	1,385	78,100
1980	58·4	1,484	86,700
1985	60·6	1,590	96,400
1990	63·6	1,691	107,000
1995	66·5	1,801	119,800

344. These modified estimates of future need are related not directly to the size of the population but to the requirements of the population for medical care ; an important consequence of this is that the estimates are likely to be less influenced by errors in the population forecasts. Experience suggests that if our assumption about future economic progress (see para. 336) is valid, the present estimate of the ages to which persons now living will survive is likely to be sufficiently accurate for our purpose. Estimates of the numbers who will be born in future years are, of course, much more speculative ; but although people not yet born will form nearly one-half of the population in 1995 they will, according to our calculations, give rise to only one-third of the expected demand for medical care at that time.

345. Any estimate of the number of doctors needed twenty-five or thirty years from now will vary greatly according to the assumptions made about the growth of demand. If we had reckoned that after 1975 the doctor–population quotient should increase annually by, for example, 1% instead of

roughly 1·3%, our estimate of the number of doctors needed in 1995 would have been lower by 8,000 (7%) than that given in Table 2. Moreover, adjustments in the supply of newly-qualified doctors must be slow, because of the length of the education and training required. Our forecasts should be taken as only very rough indications of future requirements ; they should be reviewed continuously and amended to take account of new information and developments.

346. Comparisons with other countries can be useful if they are made with the great caution that is necessary because of differences in definitions, in social and economic conditions and in the structure and organisation of health services. Table 3 below shows the doctor–population quotient in the early nineteen-fifties and the early nineteen-sixties, in a wide range of countries for which data have been compiled by the World Health Organisation ; the table also gives the average annual rates of increase over the period for each country listed. In the table are included all countries with a high doctor–population quotient, except those whose returns were not strictly comparable with the British figures shown in Table 1.

347. The doctor–population quotient in Britain was about 987 in 1951 and 1,154 in 1961. Among the many countries in Table 3 which had substantially more doctors for each million of the population in those years were, for example, the U.S.A., Belgium, the Federal German Republic and Australia. Thus there is no reason for thinking that the doctor–population quotient in Britain is nearing a limiting or "saturation" level. Moreover, in all the countries listed the doctor–population quotient rose in the interval between the specified years. The annual rate of increase varied from 0·1% in Switzerland to 5·3% in Czechoslovakia, averaging about 2·2% per year. The average annual increase of 1·6% in the doctor–population quotient in Britain between 1951 and 1961 is modest in comparison with the experience of some other countries. Even if the doctor–population quotient increases at an annual rate of 1·3%, as suggested in para. 343, Britain will not achieve for many years a greater number of doctors for each million of the population than some countries had already reached in 1963.

348. Likely future developments in other countries are also instructive. Sweden's plans are of most immediate interest for comparison because of the thorough examination of future needs made by the Swedish Royal Committee on the Needs of Medical Education and Medical Progress,* which paid particular attention to the relationship between expenditure on health services and changes in the national income. The doctor-population quotient in Sweden in 1959 was about 870, considerably lower than in Britain at that time, but the student intake of the medical schools was substantially higher, in proportion to the population, than in Britain. The Committee estimated that if the student intake remained unchanged the number of doctors would rise to a level which would give a doctor–population quotient of 1,430 in 1980. The Committee thought that this was not adequate, however, and suggested provisions to increase the number of doctors to a level which would give in 1980 a doctor–population quotient between 1,780 and 1,990. To reach these values, which are higher than the requirements we have estimated for Britain

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* See the first footnote on p. 138.

TABLE 3

The Doctor–Population Quotient in Certain Countries in the Early 1950s and Early 1960s*

Country	*A* *Early Nineteen-fifties*	*B* *Early Nineteen-sixties*	*C* *Average Annual Increase (%) between dates shown in Cols. A and B*
Czechoslovakia	910 (*1950*)	1,750 (*1963*)	5·3
Hungary	1,050 (*1952*)	1,520 (*1963*)	3·4
Sweden	710 (*1951*)	1,040 (*1963*)	3·2
U.S.S.R.	1,320 (*1950*)	1,960 (*1963*)	3·1
Belgium	1,000 (*1951*)	1,430 (*1963*)	3·0
Australia	1,000 (*1952*)	1,370 (*1963*)	2·9
Netherlands	830 (*1952*)	1,140 (*1963*)	2·9
Rumania	910 (*1950*)	1,280 (*1963*)	2·7
France	830 (*1950*)	1,150 (*1963*)	2·5
Denmark	1,040 (*1950*)	1,320 (*1963*)	1·9
Great Britain	987 (*1951*)	1,154 (*1961*)	1·6
Fed. German Republic	1,350 (*1953*)	1,540 (*1963*)	1·3
Japan	1,000 (*1952*)	1,090 (*1962*)	0·9
U.S.A.	1,310 (*1950*)	1,450 (*1963*)	0·8
Canada	1,020 (*1950*)	1,120 (*1962–3*)	0·7
Norway	1,050 (*1952*)	1,120 (*1962*)	0·6
Switzerland	1,300 (*1951*)	1,320 (*1963*)	0·1

* Number of doctors for each million of the population.

Source : W.H.O.: *World Health Statistics Annual*, 1962, Vol. III for all countries except Great Britain. The measures for Britain are taken from Table 1 on p. 133 above.

in 1995, the Swedish doctor–population quotient would have to increase between 1959 and 1980 at an annual rate between 3·4% and 3·9%. Table 3 shows that in the period 1951–63 the Swedish rate of increase was 3·2% a year.

349. An extensive examination of medical manpower in Canada, made for the Canadian Royal Commission on Health Services, was reported in 1964.† Considerable weight was given to a projection of needs for doctors based on a continuing increase in the doctor–population quotient at the annual rate experienced in 1951–61. On this basis the quotient would rise to about 1,500 by 1991 ; to achieve such an increase the output of medical graduates of Canadian origin would have to rise more than threefold, perhaps to about 2,750 a year, by about 1990. These calculations suggest that the demand for doctors in Canada will be rather similar, in relation to population, to that which we have estimated for Britain and will be hard to meet without substantial immigration : at present about one-third of the doctors who enter practice in Canada are new immigrants.

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† JUDEK, S., Medical Manpower in Canada. Ottawa, The Queen's Printer, 1964.

350. In the United States the present output of medical graduates (about 7,800 in 1966) is low for the size of the population to be served (200 million, nearly four times that of Britain). Heavy immigration of doctors has contributed substantially to the high doctor-population quotient (1,450 in 1963). An attempt is being made to increase medical school enrolment by 50% between 1966 and 1976 : by 1966 thirteen new medical schools, in addition to the 84 then offering the full medical course, had been authorised ; the establishment of six or seven more had been virtually decided and many more were proposed. This expansion will not be enough, however, to meet the increasing demand which is expected as income rises.

LIKELY FUTURE LOSSES AND GAINS

351. The number of medical graduates required annually from British medical schools, if the number of doctors in active practice in Britain is to reach the levels suggested in Table 2 on p. 139, will depend on the number of doctors gained and lost in other ways. We shall now discuss the assumptions that we have used in estimating these gains and losses, although the detailed calculations will not be given. Some of the factors to be considered have already been discussed in our assessment of short-term needs (see paras. 318–321 and Appendix 12), and need only be touched on briefly here. Our starting-point is an estimate of the number and the ages of doctors in Britain in 1965. This estimate, which is set out in Appendix 13 (Table 3), has been constructed of material from a variety of sources considered accurate enough for our present purposes, though none is completely satisfactory.

Death and Retirement of Doctors now working

352. Our calculations of the likely future mortality of doctors, by sex and age, have been based on the estimates prepared by the Government Actuary's Department, in consultation with the General Register Office, for the population of England and Wales as a whole. The differences between doctors and the general population in the incidence of death by age and sex have varied from time to time, but on the whole have been small. The potential service now lost through the deaths of people of normal working age is proportionately very small, so any inaccuracy in our assumptions about mortality is unlikely to cause more than a slight error in our ensuing estimates of the number of doctors surviving from those now at work.

353. There are difficulties in estimating the proportion of men and women doctors economically active in each age group, both now and in the future. For men the last reliable Census information is for 1951,* when the proportion of elderly men reported as economically active was larger among doctors than in other occupations. Census reports probably understate the number of women doctors, because many not actively employed as such are probably recorded as " housewives ". Special estimates and projections were provided by the Government Actuary's Department for the Willink Committee, which reported in 1957.† The Willink Committee assumed, though admittedly on a

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* The corresponding information for 1961 was obtained from a 10% sample of the population ; its value for our present purpose is limited because of the high random sampling errors involved.

† See the second footnote on p. 127.

highly speculative basis, that as doctors acquired pension rights under the National Health Service superannuation scheme the proportion of elderly doctors working would gradually decline, until 1988, at the same rate for women as for men.

354. There is no clear evidence either to justify or to cast doubts on the Willink Committee's assumptions in this connection. The proportion of elderly doctors who continue to practise seems likely to decline although the extent of the fall must depend on economic and social progress, on the relation between supply and demand for doctors and on other factors. On the basis of more recent information we have, however, made a number of modifications in the Willink Committee's projections of proportions economically active, by age and sex : for example, in the light of the findings of a survey carried out by the Medical Practitioners' Union in 1962–63* we have adjusted the proportion of younger women doctors assumed to be at work in the future. The proportion of men and women doctors consequently assumed to be still in practice, at five-year intervals up to 1990, is shown in Appendix 13 (Table 4). By applying these figures to the number of doctors likely to survive from the present total (see para. 352) we have estimated the number of doctors now working who will not be at work in the future ; these numbers are shown in Appendix 13 (Table 5). Obviously these estimates are tentative and should not be regarded as exact. We see no reason why there should be any variation in the course of time in our estimate (see Appendix 13, Table 4) that 99% of the men under 60 years old will remain economically active. The future contribution of women doctors and of older doctors to medical practice is less certain.

355. The survey carried out by the Medical Practitioners' Union in 1962–63 revealed that of the women doctors who were then working over 40% were working part-time. In our study of the trend of the doctor–population quotient (see paras. 329–332) no allowance was made for the fact that some doctors work part-time. The proportion of women doctors and their average contribution in terms of full-time equivalent work did not matter in this connection so long as these figures remained roughly constant over the period studied. In fact, although the proportion of men and women doctors in different age-groups varies because of changes in the relative numbers of each sex entering and leaving the profession at different times, there are only small differences in this respect between the age-groups that are most important in the present context. The proportion of women among the doctors in active practice was the same in 1965 as in 1951 (about 16%).

356. We shall discuss below (para. 361) the likely proportion of future entrants to medicine who will be women. For the moment we are concerned only with the contribution likely to be made to medical work by women who have entered medical practice. Those who do not get married seem to give as much service to medicine, and by and large to go as far in the profession, as their male counterparts. The majority achieve some qualification beyond their basic degree and we have found a widespread recognition that in addition to their equal competence in most fields of medicine women make a

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*** Women in Medicine. Medical Practitioners' Union and Office of Health Economics, 1966.**

particularly valuable contribution in certain branches of medicine. But many withdraw from medical service, either permanently or temporarily, in consequence of getting married and having children or because of other family responsibilities. Although women doctors tend to marry at a later age and not so commonly as women in general, the proportion who marry is increasing: it is now about 70% and might well rise to 80–90% in the foreseeable future. Even more important in this context is the effect of having children, for although some women withdraw from active practice immediately on marriage far more do so when they have children. A substantial number seem to assume at this stage that their medical career is over, but most are prepared to return to practice as soon as—and to the extent that—their family responsibilities allow them. We have been told* that women doctors on the whole make more use of their qualifications than women with higher education in other fields. Many women doctors wishing to take up practice again are unable to do so, however, either because of domestic obstacles or because they cannot find suitable work ; many are deterred by the addition to their family's tax liabilities that their earnings would involve. The survey carried out by the Medical Practitioners' Union showed that the proportion of married women doctors who were working varied according to the age of their children, as might be expected. Even among those with children under five, two-thirds were working to some extent, but altogether about 1,000 women doctors were involuntarily unemployed, and another 1,000 would have liked more work than they had. These two groups together amount to the equivalent of perhaps 400 full-time doctors who could be brought into employment if suitable work were available, and if the right help and encouragement were given. The loss of their services alone requires the annual admission of perhaps fifteen students to the medical course ; thus, women doctors already available could—and in our view should—contribute substantially more to medical work than they do at present. The loss of their potential services will mount as the number of women doctors increases, as marriage becomes more nearly universal and as childless families become less common for women doctors, although the tendency to have children at shorter intervals may reduce the length of time that a woman doctor is necessarily prevented from working because young children need her attention. There clearly exist possibilities of an increase in the contribution of women doctors to medical practice as well as influences which tend to reduce it. We have not been able to make a satisfactory quantitative assessment of the total effect of all these factors but we believe the net effect will be small and we have made no allowance for any consequent change in the future contribution of women doctors to medical practice. As women doctors constitute only 16% of the number of doctors working, and a smaller proportion in terms of " full-time equivalents ", any error in our estimates which arose from our simplified approach should be unimportant for our purposes.

357. As we have pointed out above (para. 353), the proportion of older doctors who remain in active practice is hard to estimate reliably. We have also had difficulty in finding out the kind of work done by the large proportion of older doctors who, according to the Censuses, remain at work. Since only a minority of doctors at work after sixty-five are employed in the National

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* Evidence of Mrs. M. Jefferys, on behalf of the Medical Practitioners' Union.

Health Service (including general practice), compared with about 80% of those aged 65 or less, many presumably change the form of their work at about the age of 65. The Census category " economically active " may imply for those over 65 a kind of work commitment different from that of younger doctors and perhaps, to some extent, means that they are " available for work " rather than fully engaged in work. We therefore calculated likely future losses separately for doctors over and under 65 years old ; we found, however, that although the two sets of results differed in particular years they were almost exactly the same on average for the period 1965–95. We believe that the " economically active " older doctor probably contributes proportionately less to medical work, on average, than his younger counterpart, but our calculations have shown that our estimates of future losses would not be much changed if we allowed for this difference. Alteration of our assumptions about the age of retirement could have more effect. Doctors' decisions about retirement will be influenced by the future situation in the medical profession, including the outcome of our own recommendations. But because older doctors are relatively few the estimates are not likely to be severely impaired by wrong assumptions in this connection.

Migration

358. Estimates of emigration and immigration, based on recent experience and trends, were made for our assessment of immediate needs (Appendix 12, Annex), when we assumed that over the next ten years there would be annually an outflow of 430 doctors (300 to developed countries and 130 to raise the numbers temporarily serving in developing countries) and an intake of 250 from permanent or semi-permanent migration : the annual net loss would thus be 180 doctors. So many imponderable factors influence migration that a projection for more than about ten years ahead cannot be more than a guess. We believe that the pressure on British doctors to emigrate to developed countries will be in future at least as strong as it is now. We have referred earlier (para. 349) to the difficulty that Canada will face in meeting its future needs for doctors without substantial reliance on migrants from other countries ; likewise the United States (para. 350) will be unable to meet its likely future demand from its own resources and will, according to a recent estimate,* need to admit perhaps 2,000–3,000 doctors from overseas each year. The developing countries will also need (largely on secondment or short-term contracts) many more doctors than they can themselves supply, but their economic and social conditions may prevent their attracting from elsewhere as many doctors as they would wish. We expect a continuing steady inflow of doctors from Ireland† and the older Commonwealth countries for permanent employment in Britain. There have been signs of a fall in the numbers from these sources but this may not persist in the long term. We suggested earlier (para. 320) that medical demands in Britain ought not be met by permanent or semi-permanent immigration from developing countries whose own needs were enormous, and in our assessment of immediate requirements we assumed there would be no increase in the number of such doctors serving in Britain. As a means of solving our long-term problems reliance on migration from the developing countries would be even more undesirable. Moreover, many of

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* RUHE, C. H. W. *Journal of the American Medical Association*, 1966, 198, 10, p. 1094.
† Evidence of the Northern Ireland Ministry of Health and Social Services.

these countries are greatly concerned about the emigration of their doctors and may try to prevent it.

359. Future migration might be affected by the entry of Britain into the European Economic Community. We cannot assess in terms of numbers the consequences of such major economic and political changes, but we do not think that as a result of such changes Britain will, in the long term, necessarily lose more doctors than it gains by migration. Contrary to widespread belief, Britain has not over the past thirty or forty years suffered a net loss of doctors through migration. Some estimate of past migration can be made by comparing the number of doctors reported at each Census with that reported at the previous Census, after taking account of the number who had died and the number admitted to the Medical Register after qualifying at medical schools in the British Isles (about a quarter of whom were normally resident in overseas countries—which include Ireland, for our purposes—and should therefore be excluded from the calculation). On this basis, net migration in 1931–51 appears to have been negligible ; in 1951–61 there seems to have been, on balance, a gain of about 150 doctors a year, because of an increase of about 300 a year in the number of overseas doctors, largely from developing countries, employed in British hospitals. We think therefore that although past movements have been erratic and have had many causes the evidence does not suggest that over a long period Britain will experience a heavy net loss of doctors in purely numerical terms, unless there is a substantial increase in emigration or a substantial reduction in the influx of doctors from other countries. For the purposes of our estimates, which can only be provisional and should be kept under review, we have assumed that the net emigration which we earlier took as 180 a year for the period 1965–75 (see Appendix 12, Annex) will be reduced after 1975. We have assumed that in 1975–80 there will be an annual loss of 100 a year and that after 1980 losses and gains by migration will be roughly equal.

Loss of Future Graduates by Death and Retirement

360. In paragraphs 352–357 we discussed the likely future rates of death and retirement (permanent or temporary) among the doctors already working in Britain. The magnitude of the loss by death and retirement of those doctors who enter practice in future years will depend partly on the number who graduate each year : we cannot forecast this precisely but any reasonable estimate of future losses for these causes will probably be accurate enough up to thirty years ahead, because the proportion who will have died by then will be small and the proportion not " economically active " will be much the same in each of the relevant age groups.

361. The proportion of women among future entrants will have an important effect on the average period of service that can be expected, since relatively more women than men tend to withdraw prematurely from practice, either permanently or temporarily (see para. 356). In 1964, 18 % of the young people leaving school in England and Wales with three or more G.C.E. "A" level passes in science subjects, and 21 % of those with two or more such passes, were girls ; the proportion of women among the present students in British medical schools (see para. 301) is a little higher. Since few women take up engineering or other technologies there are relatively more available

for other science-based careers, including medicine ; between 1955 and 1965 the proportion of pupils who gained "A" level passes in all the main science subjects rose considerably more for girls than boys.* In addition, changes in medical school admission requirements, on the lines we have recommended in Chapter 5, could raise the number with the requisite qualifications relatively more for girls. We believe that girls will form an increasing proportion of the school-leavers who are qualified to enter the medical course and probably, although not necessarily, of those who wish to do so. We have no basis, however, for predicting a long-term trend, and therefore assumptions and calculations in this connection, among others, may well need revision later. For our present purposes we assume that women will continue to form about the same proportion as in recent years of the number of newly qualified doctors, which, we assume, will be much larger than hitherto.

FUTURE NEEDS FOR MEDICAL GRADUATES AND MEDICAL SCHOOL PLACES

362. Table 4 shows, for 1965–74 and each five-year period between 1975 and 1994, the approximate average annual number of British-resident† medical graduates that will be needed from British medical schools if the number of doctors that we think Britain will require (see para. 343) is to be met, on the assumptions about future gains and losses discussed in paragraphs 352–361.

TABLE 4

Average Annual Number of British-resident Medical Graduates Needed, 1965–94

Period	*Average Number of Graduates Needed Annually*
1965–74	3,100
1975–79	3,500
1980–84	3,850
1985–89	4,250
1990–94	4,550

363. In recent years about 10% of the students who entered medical schools failed to graduate.‡ No selection procedure can be perfect ; apart from academic failure, some students will inevitably be lost from the undergraduate medical course because of illness or change in career intention, or because of personal circumstances. Nevertheless in some university disciplines wastage has been reduced to lower levels. We hope that improvements in the undergraduate medical course, recommended in Chapter 4, will lead to some reduction in wastage from the course, with a consequent improvement in the supply of doctors as well as in the efficiency of their education. No adequate

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* Statistics of Education, Part Three, 1965, Table 8. H.M.S.O., 1967.

† Those who are classified by the University Grants Committee as " home-based ", i.e. regarded as being normally resident in Britain on admission to the medical course. Students from other countries who remain to work in Britain permanently are counted as immigrants in our estimates.

‡ University Grants Committee. Report on University Development, 1959–62. H.M.S.O., 1963.

basis is available, however, for the prediction of future changes in undergraduate wastage ; we have therefore decided to assume that, over the period to which our forecasts relate, undergraduate wastage will continue to be 10%, including the uncertain but perhaps not negligible number of graduates who fail to register and practice as doctors. On the basis set out above we calculated the annual intake of students that would be required to produce the number of graduates shown in Table 4. Given a five-year course and the impossibility of expanding the capacity of British medical schools substantially in less than several years, the intake required cannot possibly be achieved in the next few years. In Table 5 we have set out the average actual intake achieved in the years 1960–64, and the average annual intake which would be required in each five-year period from 1965 to 1989 to give as rapid a build-up as we think practicable towards the annual number of graduates needed. The attainment of the output shown in Table 5 would prevent the already inevitable deficit of doctors from becoming much worse, in absolute numbers, and would gradually reduce the deficit in relation to the total number of doctors in Britain. We recommend that the intake figures shown in Table 5 be adopted as immediate targets for planning.

TABLE 5

Average Annual Intake of British-resident Students Recommended, 1960–89, and Resulting Annual Output of Graduates, 1965–94

Year of Entry	*Average Annual Intake Recommended*	*Year of Graduation*	*Estimated Annual Number of Graduates*
1960–64	(2,030)	1965–69	1,830
1965–69	2,600	1970–74	2,350
1970–74	3,500	1975–79	3,150
1975–79	4,300	1980–84	3,850
1980–84	4,700	1985–89	4,250
1985–89	5,000	1990–94	4,500

364. Attainment of the numbers suggested in Table 5 will mean that British medical schools will, over the next twenty years, more than double the demands which they currently make (about 2,430 in 1967–68) on the pool of educated ability in Britain. The future size of the pool was thoroughly examined by the Robbins Committee* only a few years ago. The Committee was convinced that the great expansion of higher education which it recommended would not involve a lowering of standards as a result of a shortage of students with sufficient intelligence. The Government accepted the Committee's Report and has acted accordingly. Since the Committee reported, the number of students qualifying for entry to university has risen faster, but the actual university intake has been slightly lower, than the Committee forecast. The Committee's estimates seem adequate, however, for our present broad assessment.

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* Report of the Committee on Higher Education, Cmnd. 2154. H.M.S.O., 1963.

365. Table 6 relates the past and recommended future intake of medical students to the Robbins Committee's estimates of the size of various sections of the population from which medical students are drawn. Because the age range is not the same in all the groups referred to in Cols. A–E of Table 6, the figures in different columns are not exactly comparable, but the trend is adequately illustrated by the table as a whole.

TABLE 6

Numbers Qualifying for and Entering Higher Education, 1955–84.

Year of Entry	*A* Total Aged 15–19* (*thousands*)	*B* Qualifying to enter University† (*thousands*)	*C* Intake of Universities‡ (*thousands*)	*D* Intake of Science and Technical Courses§ in Universities‡ (*thousands*)	*E* Intake of Medical Schools (*thousands*)	*F* Col. E as a percentage of Col. B
1955–59	3,137	168	130	...	9·6	5·7
1960–64	3,435	263	174	105	10·1	3·8
1965–69	4,173	354	233	146	13·0	3·7
1970–74	3,693	386	258	161	17·5	4·5
1975–79	4,016	495	354	222	21·5	4·3
1980–84	4,547	630	453‖	284‖	23·5	3·7

* At start of period.

† With at least two G.C.E. "A" level passes or three Higher and two Lower level passes in Scottish Leaving Certificate.

‡ Including Colleges of Advanced Technology.

§ Including medical courses.

‖ Assuming no increase after 1980, when the Robbins Committee's detailed projections end.

366. The numbers in Column E of Table 6, which relate to those entering medical schools, are of course only a small proportion of the relevant age group, though they are a significant share of those who enter university courses. As is shown by the figures in Column F of Table 6, over the period in question entrants to medical schools constitute a variable proportion of those who qualify for entrance to a university, and one which shows no consistent tendency to rise or to fall. In the period 1980–84 the proportion is expected to be less than it was during the years 1955–59, which was a period of contraction in medical education. The need for expansion of the numbers in many professional and skilled occupations will doubtless demand that resources of ability in Britain's youth shall be used to the best advantage. We are convinced that medicine must have its proper share of these resources.

367. We have shown that a rise in the annual number of British-resident students accepted by British medical schools to at least 5,000 over the next twenty years is both necessary if a satisfactory number of doctors is to be provided in this period, and practicable in terms of the number of able students who will be available ; to this intake should be added perhaps 200 overseas students by 1975, and a larger number thereafter (see para. 554).

Our approach has been a broad one. No estimate ranging so far ahead could be exact. We think that for the next few years long-term plans should be made with the aim of reaching an annual British-resident medical student intake of at least 5,000 by 1990 ; in the next chapter we discuss the way in which we think this expansion in entry should be accomplished. Some changes in plans may be required in the future as needs are reviewed (see para. 345) and more information becomes available, but such changes are not likely to be big or difficult if the initial target that we recommend is accepted.

368. We recommend that provision be made by the Health Departments for the routine collection of the information required as a basis for the calculation of future requirements for medical manpower. Accurate statistics should be made continuously available of the relevant characteristics of all doctors who are working in Britain, including their training and qualifications, age, place and field of practice, length of stay in this country and other matters : an amplification of the General Medical Council's present registration procedure would help considerably to meet this need.

CHAPTER 7

THE PROVISION OF UNDERGRADUATE MEDICAL SCHOOLS

THE SIZE OF MEDICAL SCHOOLS AND TEACHING HOSPITALS

369. We have demonstrated that well before the end of this century the capacity of the undergraduate medical schools in Britain ought to be expanded to provide for an intake in the region of 5,000 a year. We have given much thought to the relative contribution that can be made to the achievement of this aim by the expansion of medical schools already existing or planned and by the establishment of new schools. We cannot assess the relative cost of these alternatives. The potentialities of sites and the cost of buildings must be examined in terms of specific proposals: the responsible authorities will be able to compare the possibilities and costs of redeveloping present sites with those of new development elsewhere, as each opportunity arises. We think, however, that the fullest use must be made of resources already available and that the establishment of new medical schools should be considered only to the extent that the need cannot be met otherwise.

370. To help our consideration of the possibility and desirability of expanding the present medical schools, we asked each university in Britain with a medical school, except the University of London (see Chapter 9), to tell us what had determined the present or planned size of its medical student intake. We found that in most the determinants had been practical local considerations; few universities suggested that there was an optimum size for a medical school, and where they did we thought that their definition of the optimum was closely related to their own experience and plans.

371. The range of instruction that a modern medical school ought to provide, both in medical sciences and in clinical subjects, is very wide; the school's complement of staff in each subject must be big enough to cover the main branches of the subject and to provide a strong intellectual community—a " critical mass ", as one witness put it—in which the growth of new ideas is stimulated by constant interchange of thought and experience. Staffing on this scale, and the equipment that is needed if certain scientific subjects are to be adequately taught in the future, cannot, within the limits of money and the number of potential teachers likely to be available on any reasonable estimate, be provided for many more medical schools than Britain has already. The fullest use must be made of the limited number of properly staffed and equipped schools that can be made available. We think that the provision of the complex and expensive facilities required in a medical school in the future cannot be economically justified for those with an annual intake of less than 150–200 medical students. We recommend therefore that wherever possible an annual intake of 150–200 should be aimed at, and that schools which can take more should be encouraged to do so.

372. An increase in size will bring with it an inevitable multiplication of educational and organisational problems, but these problems already exist in all but the smallest schools and in our view they can be solved. Our recommendations on educational methods (Chapter 4) and on educational organisation (Chapter 10) will, we hope, be of help. Bigger medical schools may, however, have special difficulty in providing sufficient clinical facilities. Some witnesses have suggested that these clinical facilities should be provided by dispersing students over a wide range of district hospitals in a variety of different ways. Some of those who have advocated this solution have clearly had in mind a vocational apprenticeship in the management of common clinical problems. We believe the proper time for vocational apprenticeship is in the intern year (see paras. 63–64) and afterwards, and not in the undergraduate course. The clinical aspects of the undergraduate course are an integral part of the course and must be not only under university control but in a university atmosphere. Nevertheless, hospitals which have the special function of providing university undergraduate teaching must also undertake the basic duties of all hospitals and (as we propose in Chapter 10) play an important part in providing the hospital services of their region.

373. The size of the teaching hospital cannot therefore be decided in relation to medical education alone. The hospital's educational functions will require a full range of general and special departments, and these must be big enough to provide adequate and economic medical care. They will often have to be larger than this, in order to meet either service needs or the needs of education at undergraduate level (or in some specialties—for example, opthalmology—at postgraduate level). The number of major departments in each specialty in Britain as a whole, will, however, be limited by the number of patients who need treatment and by the staff and money available. The teaching hospital will always have special facilities which must be available to patients from outside its own district. The local population served by a single university teaching hospital will therefore be smaller than that served by an ordinary district hospital of the same size, but it must be sufficiently large and typical to provide opportunities for epidemiological research and for the teaching of community medicine (see paras. 280–282).

374. Bearing in mind the fundamental requirements of good and economic medical care, and the provision that must be made for postgraduate medical education, we cannot determine exactly how many teaching hospital beds will be needed for a given number of undergraduate students. The available evidence suggests, however, that about 2,000 " acute " beds (including geriatric assessment and short-stay psychiatric beds) should be enough for an annual intake of 200 students. Until recently civil defence policy prevented the creation of hospitals with more than 800 beds. This limitation has now been lifted, and plans are being made for much larger hospitals in some parts of Britain. All the beds required for undergraduate teaching need not, however, be provided in a single hospital: we have recommended elsewhere changes in the present arrangements for hospital organisation and government for Britain as a whole (paras. 489–501) and for London in particular (paras. 472–482); these changes will facilitate the grouping of the hospitals that will normally be needed for teaching purposes.

EXPANSION OF EXISTING MEDICAL SCHOOLS

375. We asked every British university outside London with a medical school to indicate the possibilities of increasing its medical student intake beyond the current or planned size by expanding its buildings on their present site or on an adjoining site. Many of the replies were discursive and complex: the following table shows the intake in October, 1967 and the numbers which, in the light of this enquiry, might reasonably be regarded as the intake attainable in each of the existing British medical schools outside London, without complete rebuilding of the school on a new site.

TABLE 7

Present and Possible Future Medical Student Intake of British Universities outside London

University	*Medical Student Intake*	
	1967 (provisional)	*Intake Attainable on Present Site*
Aberdeen	108	110
Birmingham*	120	250
Bristol	121	180
Cambridge†	193	225
Dundee	43	110
Edinburgh	173	200
Glasgow*	222	225
Leeds	78	200
Liverpool	112	140
Manchester	105	250‡
St. Andrews	50	
Newcastle	94	220
Oxford	108	110
Sheffield	80	200
Wales	69	180
Total	1,676	2,600

* See para. 380.
† See para. 379.
‡ See paras. 377 and 380.

376. The proposals in Chapter 9 for reorganising the London medical schools will, if accepted, increase their annual undergraduate intake capacity to about 1,200. If we assume that the new medical schools which are being established at Nottingham and Southampton will each in due course be capable of attaining an intake of 200, as they should do, we find that a total intake capacity of around 4,200 a year could eventually be achieved by the medical schools already existing or planned, if the money were available for

the necessary extensions and replacements of their buildings and if the staff required could be recruited. There is no suggestion, of course, that this expansion could or should be considered as a single operation. The present buildings of the undergraduate medical schools have mostly been standing for a long time and those not already overdue for replacement will have to be replaced before the end of the century. We recommend that the process of redevelopment be carried out with an urgency appropriate to the immediate need for doctors to meet present shortages, and to the long-term need for reaching the maximum potential capacity of these schools within the next twenty years or so. We recommend that as each school is redeveloped (see paras. 389 and 396) the opportunity be taken to replace it on a scale and pattern appropriate for the future, the aim being an average annual intake capacity in the region of 200 students (see para. 371). The new schools at Nottingham and Southampton should also be expanded to this level.

377. The redevelopment and expansion of present medical schools is ultimately limited by the population of the surrounding area, which determines the number of patients to which their students can reasonably have access. In some places the population available is unlikely ever to provide enough patients to make possible a large medical school; indeed, the Universities of Aberdeen and Dundee will probably never be able to take more medical students than they already plan for. In other places, possibilities exist of a rise well beyond the figure that we have suggested. Full advantage must be taken of the resources of population and hospitals where they are available; even universities whose preclinical departments have already reached the limit to which they can reasonably go for the time being may be able to expand their clinical teaching intake by using the preclinical resources of another university. Oxford has always sent many, and Cambridge virtually all, of its medical science graduates elsewhere for their clinical education. In exceptional circumstances other arrangements of this kind could be made satisfactorily between universities a long way apart. We think that the arrangement recently made between the Universities of St. Andrews and Manchester offers the best solution to the difficulty faced by the University of St. Andrews in providing clinical education for its medical science graduates, and will permit greater educational benefit to be derived from the clinical resources available in the Manchester area. Nevertheless, long-distance partnerships between universities in medical education, other than those already established, will in our view be unnecessary.

378. We think that instruction in the preclinical and clinical subjects should be carried out in reasonably close proximity, so that staff and students in each can derive the most benefit from informal contact and cooperation with those in the other. Moreover, the centres of population in which additional clinical facilities are most likely to be available are also the centres most likely to offer, either now or in the long term, the complementary university resources in non-clinical subjects.

379. At Cambridge, for example, unused resources for clinical teaching are available. The University's departments of medical sciences have a capacity for an annual intake of about 200 students but rely on medical schools elsewhere, chiefly those in London, to provide clinical education for their students.

A reduction in the number of students from Cambridge who seek clinical education in London would enable the London medical schools to accommodate more clinical students of their own and thus to achieve, more rapidly than would otherwise be possible, the raised preclinical intake that we recommend in Chapter 9. The postgraduate medical departments in Cambridge have increased in number and size in recent years and the staff of the United Cambridge Hospitals has greatly expanded during the past 20 years along the lines recommended by the Goodenough Committee* as a necessary prelude to the establishment of an undergraduate clinical school. The population of the city, together with that of the surrounding area of East Anglia, provides enough patients to make possible undergraduate clinical teaching on an effective scale. Addenbrooke's Hospital is now being rebuilt with accommodation suitable for undergraduate teaching, and other hospitals in the district could contribute to the teaching facilities. We recommend that an undergraduate clinical school be established at Cambridge. In our view such an addition to the number of clinical teaching places is required if the country's resources are to be properly used, and if the existing postgraduate medical departments at Cambridge together with the departments of preclinical medical sciences are to be fully supported in the future. As facilities for clinical teaching available elsewhere become used more fully by other medical schools, difficulties may well arise in finding the means of providing clinical instruction outside Cambridge for Cambridge students. The pattern of development for the London medical schools which we outline in Chapter 9 is not designed to depend upon the entry of a substantial annual intake of clinical students from outside the refashioned medical schools in London.

380. A more substantial increase in the country's total intake capacity would be possible if advantage were taken of the potentialities of other centres of population with established medical schools: only by making full use of the resources of the large conurbations can the necessary expansion of undergraduate medical education in Britain be satisfactorily achieved. Glasgow, for example, offers both population and hospitals sufficient in size to support clinical teaching for more students than the preclinical departments of the University of Glasgow can accommodate in the foreseeable future; the University of Strathclyde, which is close to one of the major teaching hospitals associated with the University of Glasgow, already provides instruction in a number of the subjects required by preclinical students and could without great difficulty cover the whole range of preclinical subjects. These two neighbouring universities have agreed that arrangements could be made which would permit the University of Glasgow to make full use of the clinical facilities available by providing clinical instruction for the medical science graduates of the University of Strathclyde as well as for its own students; if this were done, the medical student intake capacity of Glasgow could be quickly increased to at least 275, rather than the 225 suggested in Table 7, and further increases would be possible later. We hope that such arrangements will be made, and that similar arrangements will become possible also in the Birmingham and Manchester conurbations, enabling the Universities of Aston and Salford respectively to develop their teaching potentialities in

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* Report of the Interdepartmental Committee on Medical Schools, p. 127. H.M.S.O., 1944.

the medical sciences in close cooperation with the older-established medical schools nearby.

NEW MEDICAL SCHOOLS

381. If the medical schools already existing or planned are expanded to the limit of their capacity, with the help where possible of neighbouring universities, as we have recommended in paras. 375–380, their total intake will still fall short of that required to meet Britain's likely future need for doctors. The establishment of at least four additional medical schools will be necessary over the next fifteen or twenty years.

382. Many proposals have been put to us for the creation of new medical schools in particular places including, in addition to those mentioned elsewhere in this chapter, Bath, Brighton, Durham, Exeter, Lancaster and Uxbridge. In many instances universities and groups of doctors took great trouble to prepare detailed plans for the establishment of medical faculties and the development of teaching facilities. We have considered every proposal carefully. Some proposals were based on an assumption that medical graduates tend to practise in the area of the medical school where they were educated, and therefore that new medical schools should be located with an eye to the need for doctors (and especially for general practitioners) in particular parts of the country. We know of no evidence to support this assumption. Most medical schools are situated in areas of large population; a great many of their students come from the surrounding area and tend to remain there when they are qualified. What little evidence there is about the settlement pattern of doctors educated away from their home area suggests that those entering general practice, at least, tend to return to their home area to practise, rather than to remain near their medical school.* In any case, the pattern of settlement observed among doctors trained in the past may not continue to be valid in the future. We think that the argument about settlement introduces unnecessary and misleading considerations, but there is the important possibility that the supply of general practitioners in a particular area may well be heavily dependent on the extent to which boys and girls from that area are attracted into medicine, and areas already short of doctors may be even worse off in the future because an increasing proportion of medical school places is being filled by doctors' children (see para. 298). One way of attracting boys and girls into medicine may be to set up a local medical school. Where the necessary teaching resources cannot be provided, however, some other local means must be found of bringing to the attention of the younger generation the atrractions of a medical education followed by a career in their home area: this should not be beyond the resourcefulness of communities and authorities which are determined to improve their local medical services.

383. Some proposals we have received about the location of new medical schools have drawn attention to the influence that a medical school exercises on the standard of medical care in its area. This point has more supporting evidence than the proposition, discussed in the preceding paragraph, that

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* LAST, J. M., *Brit. Med. J.*, 1967, **2**, 796–799.

medical schools influence the number of doctors settling in an area; nevertheless, this argument likewise must usually fail because medical schools can be sited only where the population and hospitals are available to support them. Regrettably, the areas most in need of more doctors and higher standards of medicine are often the least able to provide the resources needed for the establishment of a medical school.

384. We have said above (para. 371) that for educational and economic reasons medical schools ought henceforth to aim to reach an annual intake capacity of at least 150–200 students; the number of patients to which medical schools must have access if they are to reach this size can be found only in major centres of population. We could not justifiably recommend the foundation of a new medical school in a location where the school would be unlikely ever to reach an economical and effective size. Therefore the establishment of new medical schools must, like the expansion of existing schools, take place primarily in the big conurbations. We cannot, of course, predict accurately the developments of industry and communications that will play an important part in determining the future distribution of population, and we do not exclude the possibility that the establishment of medical schools may at a later stage be justified in places other than those which at present seem likely to be the most suitable.

385. Most places which can offer the necessary concentration of population will be able sooner or later to provide the kind of hospital that a modern medical school requires for clinical education. As we have said (para. 374), the 2,000 beds which will probably suffice for an annual intake of up to 200 students need not all be found in a single hospital: in fact there are, and will be for many years, very few general hospitals of such a size in Britain. The hospitals used for undergraduate teaching should, however, be big enough to be economically efficient and must be able to attract clinical staff of more than average ability; furthermore, they must be located reasonably close together and reasonably close to the university with which they are associated (see para. 378). Several proposals put to us for new medical schools have been based on the possible use of widely-separated and sometimes small hospitals. We recognise that the small local hospital can offer excellent opportunities for individual clinical experience and responsibility, but we think that these opportunities are more appropriate for the graduate doctor than for the undergraduate student.

386. The modern medical school must be an integral part of a university which can be expected to provide in due course a full range of opportunities for instruction and research in those biological, physical and behavioural sciences which are relevant to medicine. The general scale of the university's development must be big enough to allow a medical school which is established within it to reach the desirable size without causing imbalance and distortion in the pattern of the university's activities. A university with less than 4,000 students in all would, we think, be unable to accommodate satisfactorily a medical faculty with an annual intake of 150–200 students, which in our view is the minimum required of a new medical school.

387. Few places in Britain can provide the resources of population, hospitals and university development that, in the preceding paragraphs, we have

suggested are needed. Of those cities and towns without medical schools already, Southampton undoubtedly offers the most adequate facilities. The University has already a total of 4,000 students and has staff and departments, including a well-established Department of Physiology and Biochemistry, which can constitute a strong nucleus for a medical school. There are strong links between the University and the Wessex Regional Hospital Board, which serves a growing population already amounting to 2 millions (half of whom are concentrated in Southampton, Portsmouth and Bournemouth and the surrounding areas). The Board is rebuilding the main Southampton hospitals on lines which are readily adaptable to meet the needs of undergraduate clinical teaching. The case for establishing a new medical school in Southampton is thus so strong that we advised the Government to authorise this development without waiting for our final recommendations (see para. 325).

388. Leicester likewise offers the prospect of being able to provide in the very near future the combination of resources required for a new medical school. Within the next ten years one of the city's main hospitals alone will provide, when current rebuilding is complete, over 1,200 beds suitable for clinical teaching, and will draw upon a population of over 800,000; the additional population and the number of suitable hospital beds that will be available in the longer term should be ample to enable the area to support a medical school with an annual intake of 200 students. The University, whose student body will number 3,000 within a few years and seems likely to become much bigger later, has given high priority to the development of teaching and research in the biological sciences, including biochemistry, physiology and genetics. In our view, the establishment of a medical school at Leicester should be put in hand as soon as possible.

389. About 2,540 students, of whom about 2,430 were normally resident in Britain, were admitted to preclinical courses in Britain in the autumn of 1967.* The new medical school at Nottingham will soon admit its first medical students; Southampton will probably start in 1971; Leicester could perhaps be ready for its first intake by 1972. Between them, these new schools should by the mid-seventies be able to add nearly three hundred a year to the present intake capacity of Britain's medical schools. The development of additional preclinical teaching facilities in Glasgow, Birmingham and Manchester, as suggested in paragraph 380, could add at least a further one hundred intake places in the same period. A total of 3,700 intake places (of which 150–200 might be occupied by students from overseas) could thus be made available by about 1975 if during the next few years certain medical schools elsewhere in Britain were rebuilt on a larger scale, so as to provide an additional 750 places: we suggest that, without prejudice to the reorganisation of the London medical schools proposed in Chapter 9, about 200 of these additional places should be provided in London, where ample population and hospitals are available.

390. The medical school capacity available soon after 1975 could, we think be further increased by the establishment of a new medical school at Swansea, where conditions are very suitable. The University College there has already more than 3,000 students, most of whom come from outside Wales, and offers

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* See Appendix 9, Table 2.

substantial relevant academic resources. A big new hospital, which in our view could be adapted without great difficulty for undergraduate clinical teaching, has been built immediately alongside the College and land is available for expansion; this hospital, with other hospitals in the district, could meet the needs of a reasonably large medical school on the assumption that the population drawn upon will be not only that of the immediate area (under 600,000 at present) but for many purposes that of the whole of south-west Wales, which is over 850,000 at present and is likely to expand as industrial and commercial development proceeds.

391. If a medical faculty is established in the University College at Swansea the present arrangements for medical teaching at Cardiff should be reviewed. We have already made clear our view that medical schools should be regarded essentially as university faculties and organised accordingly in relation to institutions which provide teaching and research over a wide range of other faculties. This is already the case everywhere in Great Britain except in London and in Wales. Our proposals for reorganising the London medical schools are set out in Chapter 9. The Welsh National School af Medicine at Cardiff is a clinical school attached directly to the University of Wales and organisationally separate from the preclinical departments of University College Cardiff. It was originally part of the latter College but was given a separate existence nearly forty years ago, after local difficulties had arisen in the arrangements for relating preclinical and clinical teaching. Whatever the merits of that change may have been, we do not believe that they are relevant to undergraduate medical teaching in the present day. So long as the Welsh National School of Medicine at Cardiff is responsible for organising the provision of postgraduate medical education for the whole of Wales the School must, in deference to local feeling in other parts of the Principality, continue to have the status of a separate School of the University of Wales. On the evidence available to us we cannot see any other useful purpose, administrative or educational, in the concept of the School as a component of the University rather than of University College Cardiff. If the responsibility for postgraduate medical education in Wales were to be shared, the University of Wales should give serious consideration to the reunification of the Welsh National School of Medicine with University College Cardiff. Although the clinical departments will have to remain geographically separate from the main University College buildings, their staff and organisation should in our view become part of a single Faculty of Medicine in the College, financed and governed like the other faculties of the College.

392. We hope that in the period after 1975 conditions will be appropriate for the establishment of new medical schools in several other centres. The North Staffordshire conurbation offers substantial resources of population and outstandingly suitable hospital facilities in Stoke-on-Trent, which ought in the national interest to be fully used for medical education. The University of Keele is, however, relatively small and is not on present plans likely to reach a size which would permit the establishment there of a medical school big enough to be, in our view, economical and educationally effective. We think that only if the University's development during the next decade is such as to open up the possibility of its accommodating eventually an annual intake of at least 150 medical students, and if teaching in biology and other sciences

is developed on an adequate scale, should a medical school be set up there; meanwhile, we hope that the necessary rebuilding of some of the Stoke hospitals will be done in such a way as to facilitate the introduction of undergraduate teaching if and when the University becomes able to provide the academic setting needed for it.

393. The potentialities of Hull for medical education will likewise, but for different reasons, not become clear for a number of years. The University would be well able, in point of its general scale and the resources of its relevant departments, to support a medical school of substantial size; the hospitals in the city could probably, with some further development, provide satisfactory clinical teaching facilities; but the population on which the medical school could for the present draw for clinical teaching purposes will be quite small (between 500,000 and 600,000) unless easy access can be given to the rapidly developing industrial and commercial area of Lincolnshire on the south side of the Humber. We think the case for the establishment of a medical school at Hull will be much stronger when a firm decision has been taken to proceed with the building of the long-projected bridge over the Humber.

394. If the University of Cambridge decides against the introduction of undergraduate clinical teaching on a substantial scale (see para. 379) the clinical resources available in East Anglia might well be sufficient eventually to support a medical school at Norwich. The two main Norwich hospitals (one of which might be rebuilt alongside the University buildings) are expected to serve a population of 630,000 by 1981, and the Cambridge and Ipswich hospitals could provide access to a much larger population if necessary. If by then this population is not contributing to medical education in Cambridge we recommend that careful consideration be given to the possibility of establishing a medical faculty in the University of East Anglia. A medical school at Norwich might well be able to provide preclinical as well as clinical teaching for many more students than could be accommodated in any foreseeable expansion of the Cambridge preclinical departments.

395. The substantial population and impressive hospitals which will be available in the South Warwickshire conurbation by the nineteen-eighties will in our view be more than sufficient to meet such calls as may be made upon them by medical schools in Birmingham and Leicester (see para. 388). By that time also the University of Warwick at Coventry should have reached a stage, both in size and in academic development, at which it would be able to draw upon these resources most effectively for medical education. We regard this prospect as sufficiently clear and attractive for the University to be encouraged to orient its academic development in relevant subjects towards the eventual needs of a medical school with an annual intake of 200 students, and for the hospital authorities to be encouraged to establish a suitable hospital as close as possible to the University.

CONCLUSION

396. We hope that the rebuilding of existing medical schools (see para. 389) will continue between 1975 and 1990 until they have reached the greatest capacity attainable in their present localities. If we assume that by 1990 the intake capacities suggested in Table 7 (p. 153), which total 2,600, will

have been attained and that at least a further 200 places will have been made available at Glasgow, Birmingham and Manchester as suggested in paragraph 380, that the intake capacity of the London medical schools will have reached 1,200 (see Chapter 9), and that intake places totalling 1,100 will be provided in new schools at Nottingham (200), Southampton (200), Leicester (200), Swansea (150), Keele (150) or Hull (150) and Coventry (200), the total annual intake of medical students normally resident in Britain will barely exceed the 5,000 that we think should be aimed at by 1990 (see Chapter 6), apart from the places required for medical students from overseas. We recommend that the strongest efforts be made to achieve a new building and redevelopment programme on the lines we have proposed, and that every advantage be taken of new possibilities which may present themselves towards the end of the period under review for further increasing the capacity of British medical schools in order to meet the needs of the time and make good to some extent the shortages of medical manpower already evident, which are bound to increase in the years before the improvements we have recommended can become effective. Universities cannot be expected to undertake the necessary developments unless they are given funds specifically designated (" earmarked ") for this purpose, as we recommended in our interim memorandum to the Secretary of State for Education and Science (see paras. 323–324).

397. Modifications in the structure of medical schools and teaching hospitals will be required by the changes that we propose in educational methods (see Chapter 4) and organisation (see Chapter 10). Space for small-group teaching is at present insufficient and in some schools completely absent; the need for more can perhaps be met by the provision of rooms urgently needed for other reasons also, such as offices for medical staff and adequate research space for part-time as well as for full-time staff. Better accommodation must also be provided for the staff concerned with administration and educational organisation in the medical school. Wherever possible, better facilities should be made available for private study. The present shortage of reading space in libraries would be much worse if the libraries were used by medical students as much as they should be. In teaching hospitals, not all of which are close to medical schools, there are usually few places in which the student can read or write outside the wards. Proper provision of teaching rooms and student laboratories may help, but careful thought should be given also to the possibility of providing for clinical students the kind of study-cubicles available in some American and Australian teaching hospitals. Every effort should be made, for educational as well as for economic reasons, to provide accommodation for teaching shared with students in fields related to medicine, e.g. dentistry, medical social work and nursing. Residential accommodation, which will be increasingly required as medical schools draw more of their students from further afield, should likewise be shared as far as possible with other faculties except when such accommodation is specifically required to enable clinical students to live for a time in or near the university hospital (see paras. 232 and 273).

398. If medical schools are expanded as we have recommended, neither the cost of additional buildings nor the increase in medical school staff required need be proportional to the increase in undergraduate intake capacity, though they will be very substantial (see para. 414). No avoidable obstacle

should be allowed to hinder the recruitment of medical teachers. The expansion we recommend may often require British medical schools to call on the services of teachers from other developed countries: statutory restrictions on the registration in this country of doctors with overseas medical qualifications ought not to be allowed to deprive Britain of the services of such teachers.

CHAPTER 8

THE COST OF MEDICAL EDUCATION

INTRODUCTION

399. In order to arrive at some idea of the national resources that will have to be devoted to medical education if national needs are to be met, we have attempted to find out roughly what medical education costs at present in this country. The question is far from straightforward. Even on a broad national basis there is no clear picture of the extent of public expenditure on medical schools, though the evidence submitted to us by the Department of Education and Science shows that recurrent university expenditure (excluding research grants) in this field rose from £5·3 m. (0·030% of the gross national product) in 1954–55 to £12·4 m. (0·038% of the gross national product) in 1963–64. This increase is somewhat less than the increase in recurrent university expenditure in all fields in the same period. Nevertheless, recurrent expenditure for each medical student rose between 1954–55 and 1963–64 by 139·4%, from £404·6 to £968·75, while expenditure for each student in fields other than medicine increased by 66·2%.

400. In order to provide a starting-point for the calculation of national expenditure, present and future, we have concentrated mainly on establishing the present cost of educating a doctor to graduate level in this country. The only specific estimate available of the cost of undergraduate medical education in Great Britain was published in 1964 by Professor K. R. Hill,* who reckoned that the cost of producing a graduate doctor in 1961 was roughly £10,000. No detailed information about medical school costs has hitherto been available which would permit this estimate to be checked and some assessment to be made of the nature and extent of variation between schools. The University Grants Committee had undertaken a general enquiry into university costs, but the results were not expected to become available in time to be useful for our purpose, and in any case would not have provided all the information required. We decided therefore to invite four medical schools (two in London, one elsewhere in England and one in Scotland) and their associated hospitals to cooperate in an enquiry aimed at finding out whether reasonably accurate information could be produced in this field, and at giving a rough idea of actual costs. We are most grateful to them for their willingness to help in this way, and for the very substantial work they put into the project although they are not staffed to undertake this kind of analysis.

COSTS AT FOUR CENTRES IN 1965–66

401. The problems of costing university education in any field are too well known to require a lengthy description here. The major element in university costs is attributable to staff salaries, and any detailed costing

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* HILL, K. R., *Brit. Med. J.*, 1964, **1**, 300-302.

involves the apportionment of staff time between a number of different activities (e.g. teaching undergraduates, teaching postgraduate students and supervising their research, carrying on the teacher's own research, and administrative work). These activities are so closely interrelated that apportionment of time between them can be only approximate. We decided to attempt only a very broad assessment of the expenditure involved: the medical schools concerned were asked to provide an estimate of the costs attributable to undergraduate medical education, in respect of the staff and equipment directly involved, and of an appropriate share of the cost of general services and facilities; research costs were excluded except where they were incurred by staff appointed primarily for teaching.

402. Undergraduate medical education requires not only university facilities but also the services of hospitals to whose costs teaching contributes a small and not easily identifiable part. In this enquiry an attempt was made to identify the cost of teaching and other services which hospitals provided specifically for undergraduate medical students; we hoped also to make some assessment of hospital costs indirectly associated with undergraduate teaching, such as the cost of the special staff and equipment for patient care usually found in teaching hospitals, and of the rather ill-defined differences in standards of accommodation and staffiing which tend to characterise teaching hospitals.

403. Table 8 shows, in comparison, the main features of the information supplied by the medical schools and hospitals taking part in the study. In order to reduce the figures to comparative form, the total costs have in each case been averaged over the number of students concerned, and are presented primarily in the broad categories of " departmental costs " (supplemented by details of the costs of individual departments where these were available in suitable form) and " other medical school costs ", for each stage. In most cases the latter costs reflect common services provided for the school as a whole ; their allocation to each stage of the course has had to be determined mainly by the number of students involved, so the average cost per student does not vary much, if at all, between stages. For the clinical stage, details are given also of the average hospital costs specifically attributable to undergraduate teaching.

404. No premedical course is provided at the university in the English provincial centre concerned, which is identified as Centre E in Table 8. The two London centres (L.1 and L.2) are broadly similar in their environment, their numbers of premedical students and their general premedical course costs in 1965–66, though costs in particular departments show striking contrasts. The departmental costs of the Scottish university (S) in the premedical stage were generally very much lower, presumably reflecting among other things the larger number of students taught. In individual departments there were big differences: in chemistry, for example, the average cost at L.2 was about the same as that at S, and only one-third that of L.1, despite the fact that in both the London schools the instruction was provided by the staff of a department primarily concerned with preclinical teaching. In physics, however, the average cost at L.2 was well above that at L.1.

TABLE 8

Average Cost of Educating a Student at Four Medical Teaching Centres in 1965–66

Category of Cost	Average Cost (£)			
	Centre S	*Centre* E	*Centre* L.1	*Centre* L.2
Premedical Stage				
Departmental Costs	239	(No	959	1,094
Chemistry	62	Pre-	156	52
Physics	54	Medical	371	557
Biology	123	Course)	432	466
Other	—		—	19
Other Medical School Costs	260		258	356
Total	499	—	1,217	1,450
Preclinical Stage				
Departmental Costs	405	701	585	782
Anatomy	137	202	171	186
Biochemistry	83	241	138	145
Physiology	106	155	142	255
Pharmacology	—	103	83	116
Other	79	—	51	80
Other Medical School Costs	260	443	258	356
Total	665	1,144	843	1,138
Clinical Stage				
Departmental Costs	652	1,235	692	827
Other Medical School Costs	260	443	269	356
Hospital Costs	196	146	345	443
Medical Staff	155	96	268	380
Nursing Staff	19	—	—	21
Accommodation, etc.	22	29	70	30
Other	—	21	7	12
Total	1,108	1,824	1,306	1,626

405. At the preclinical stage of the course the numbers of students in each of the four schools were broadly comparable, and there was a smaller range of differences in average costs. There was a gap between the two London schools, with E and L.2 as far above L.1 as S was below it; but apart from the fact that S was again the lowest in every respect there was no consistent pattern of difference in any subdivision of the costs, either in " departmental costs " generally as against " other medical school costs ", or in the costs of

the departments which were separately identifiable in each school. If comparison is restricted to the three departments which the three English schools have in common with the Scottish school, the general differences are much reduced.

406. Comparison of medical school costs in the clinical stage has been possible only in general terms: the difficulties of aligning the subjects and specialties for which separate figures were given by some schools were so great that the attempt was abandoned. At the London centres, average medical school costs at this stage were rather similar to the average preclinical costs, but at the other two centres the average medical school costs were substantially higher at the clinical stage than at the preclinical stage. The departmental costs at this stage showed no consistent relationship to their counterparts at the preclinical stage, except that the former were higher in all cases; Centre E's costs in this category were 50% above those of any of the other schools. On the other hand, the " hospital costs " reported from Centre E (see para. 408) were the lowest of all. The distribution of costs between medical school and hospital must of course be determined to a significant extent by local factors and particularly by differences between London and elsewhere. For comparative purposes medical school and hospital costs are probably best considered together; when this is done, the average cost of the clinical course in all its aspects at all the four centres is shown to be about 50–60% above that of the preclinical course.

407. The four schools fall into the same order of cost in the clinical stage as in the preclinical stage, both in respect of " departmental costs " and in respect of " other medical school costs ". This would perhaps be expected, in view of the close relationship between the two stages : both take place under the aegis of one university, in the same locality, with roughly the same annual intake of students, so that both are affected by important general influences which tend to move them both in the same direction; the differences in content, staff and objectives in the two stages, however, are probably big enough to rule out major local variations in the balance of expenditure between the stages (except to the extent that paraclinical subjects are taken in one stage or the other according to local preference). Despite the great variation in " hospital costs ", the addition of these to " medical school costs " does not change the order of the four schools.

408. An examination of the main elements in the costs reported by the four hospitals concerned as specifically attributable to undergraduate medical education shows immediately that the costs of the two London hospitals were far higher, particularly in respect of medical staff, than those of the other two hospitals. This difference must to a great extent reflect known differences in staffing policy between London and other medical schools but may be partly due to the method of calculation, which is far from exact. The estimation of hospital costs was recognised from the outset as a particularly difficult problem, and each of the hospitals was asked to approach it on the basis that seemed most suitable in its own case. The amount of medical staff time reckoned to be spent in undergraduate teaching was much larger in the two London hospitals than in the others: one of the former counted 25% of the time of all its staff at Registrar level and above, and the other

21% of Consultants' and 43% of Senior Registrars' time; the other two hospitals made more detailed assessments which led to relatively low cost figures. One of them, however, listed a number of important activities closely related to undergraduate education which were excluded from this assessment. The hospital at Centre L.1 attributed to undergraduate medical education much higher accommodation costs than did the other three hospitals but, unlike the others, no additional nursing costs. These differences illustrate the difficulty of standardising any approach to costing on the hospital side of medical education, even if it is restricted to directly attributable costs. No attempt was made in our enquiry to specify indirect costs, and the comments of the cooperating hospitals give no reason for hope that much progress could be made in this direction without a much more extensive and searching enquiry than we considered necessary or possible in the time at our disposal.

409. The directly attributable educational costs are only a very small part of the total costs of teaching hospitals. The total includes also, as we mentioned in paragraph 402, three other elements. First, there are the costs of the special diagnostic and treatment facilities which teaching hospitals tend to have; secondly, the costs attributable to the generally superior standards of patient accommodation, medical and nursing staff which have traditionally distinguished teaching from non-teaching hospitals and which make an important contribution to their suitability for teaching; and thirdly, the costs of fulfilling the normal service functions of every hospital. The last of these elements can be roughly estimated on a national basis, as Professor Hill did in 1964 (see para. 400); for the purposes of our enquiry a special examination was made of the costs of non-teaching hospitals closely comparable with two of the teaching hospitals taking part. The results, which are supported by a comparison of unit costs in teaching and in " acute " non-teaching hospitals throughout Britain, suggest that the normal service function of a teaching hospital accounts for roughly three-quarters of its total costs. We were unable, however, to separate the costs of the other two elements; together they amounted to about £1,800 and £2,200 at the two hospitals concerned for each student in the year 1965–66. Not all this sum—perhaps very little or even none of it—can properly be attributed to undergraduate education.

TABLE 9

Average Cost of Successful Completion of the Undergraduate Medical Course at Four Centres

Stage of Course	*Average Cost* (£) *of Successful Completion*			
	Centre S	*Centre* E	*Centre* L.1	*Centre* L.2
Premedical stage	659	—	1,473	1,639
Preclinical stage	1,722	2,139	1,659	2,061
Clinical stage	3,357	6,631	3,942	5,100
Preclinical and Clinical stages	5,079	8,770	5,601	7,161

410. The four medical schools cooperating in the enquiry were asked to state the numbers of students who achieved a registrable qualification and of those who left without success, in 1965–66, and the aggregate time that all the students in each category had spent in each stage of the course. The answers to these questions enabled us to calculate the average cost of producing a successful individual at each stage, and thus the average cost of producing a medical graduate, in terms of 1965–66 expenditure. The results, which are shown in Table 9 (p. 167), range from £5,079 to £8,770 for the four centres. They reflect, of course, the differences in expenditure already considered in detail, but although the Scottish centre recorded the lowest average expenditure in 1965–66 at the preclinical stage, its cost of producing a successful preclinical student was not the lowest.

PRESENT AND FUTURE DEMANDS ON NATIONAL RESOURCES

411. Two main points of interest to us emerged from the enquiry. The first was that, for the preclinical and clinical stages together, the range of product-cost was wide, with an extreme ratio of more than 1·7 : 1. We do not wish to over-emphasise the width of this range, or to suggest that the observed differences in cost are unjustified. Apart from the many imperfections of method in our enquiry, the differences in cost may be due to differences in standards or to casual differences in the amount of money allocated to each centre in the year concerned. In our view such findings can most usefully be thought to offer each centre an opportunity to compare its costs with others over a period and to decide for itself whether the relative cost and the standard of the education it provides are compatible.

412. The second point of interest is that, when account is taken of the indirect hospital costs excluded from our calculation (at perhaps £2,000 a year—see para. 409—they could be estimated at anything up to £6,000 for a three-year clinical period), our findings are broadly consistent with the round figure of £10,000 which Professor Hill reached by inference from national statistics, as the cost of educating an undergraduate medical student. The undergraduate medical course usually lasts about five years at present. We therefore estimate, very roughly, that on average Britain is at present spending about £2,000 a year, on current account, for every undergraduate medical student at British universities.

413. The capital cost involved in undergraduate medical education can be assessed only arbitrarily. The estimated costs of the latest preclinical and clinical building projects sanctioned by the University Grants Committee suggest that with a five-year course the capital cost of new buildings and equipment is very roughly £30,000 for each intake place provided. The amortisation of capital does not usually enter into Government accounting; capital expenditure is considered as a separate item. Assuming that new buildings are designed (as they should be) in a way that will permit, with internal modifications from time to time, a life of fifty years, and taking interest into account, we suggest that the average level of capital expenditure required over a long period to provide additional buildings and replace old buildings will be very roughly £500 a year for each undergraduate medical

student accommodated. Finally, account must be taken of the cost of supporting the student: perhaps £500 a year should be added for this purpose, if we ignore the hidden cost of forgoing the contribution the student might have been making to the gross national product if he had been otherwise engaged.

414. Since there are about 11,000 students in various stages of the medical course, undergraduate medical education appears from our calculations to be costing the country at present £30–35 m. a year at 1965 prices. An increase of the annual intake to about 5,000, as we have recommended in Chapter 6, should not in itself raise the total cost correspondingly if the size of medical schools is increased as we have proposed. The improved administrative arrangements recommended in Chapter 10 will be expensive in themselves but should ensure better value in return for future medical school expenditure. Moreover, the acceptance of our proposals in Chapter 4 for changing the balance of the medical curriculum so that rather more time is spent in what have been traditionally regarded as preclinical activities, and rather less in undergraduate clinical education, should change the pattern of cost to some extent: our findings have suggested (see para. 406) that at present, if we take account only of medical school costs and identifiable hospital costs, the cost of educating a medical student for a year is about 50–60% greater in the clinical stage than in the preclinical stage. Nevertheless there are many deficiencies in medical education today which must be remedied and the kind of teaching we have recommended is likely to be more expensive in terms of staff than present methods. We think that on balance Britain's total annual expenditure on undergraduate medical education in 1990 will have to be at least £80 m. (at 1965 prices) if our recommendations are implemented.

415. We could not identify the cost of postgraduate medical education, professional training and continuing medical education except to the extent of the direct contribution made towards it from central government funds, amounting to about a quarter of a million pounds in England and Wales in 1966–67.* Our account is therefore far from complete, particularly since the extent of postgraduate education and training will, we hope, increase markedly in future years (see Chapter 3). We have ignored the social and economic costs of attracting to medicine a substantial number of people who might otherwise have been working in other fields of science and technology. For our purposes, however, the lack of precise and comprehensive figures is not important. We have sought only to present an idea of the magnitude of the call made by medical education on the resources of the nation. We have suggested that it is already in the region of £30–35 m. a year, at 1965 prices, and is likely to reach more than twice that figure in the next twenty years or thereabouts. The associated increase in the amount of national resources devoted to the provision of health services, as distinct from medical education, is not our concern. No nation can afford to spend such sums without proper consideration; we recommend that machinery be set up to plan and administer the provision of the money needed for medical education. The University Grants Committee and the Health Departments should institute regular enquiries into the university and hospital costs of medical education at each centre, with a view to keeping in touch with changes in the total and in the

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* House of Commons Hansard, 8th May, 1967, Vol. 746, Col. 1033.

balance of its main components, arranging for individual institutions to compare their costs with those of others in general and to examine any anomalies in a spirit of constructive criticism, and ensuring that high costs are explicitly justified. We recommend also that arrangements be made by the University Grants Committee and the Health Departments for formulating a co-ordinated and authoritative assessment, on a continuing basis, of the future need for medical school provision and its likely cost, and for bringing this assessment regularly to the notice of the Government.

CHAPTER 9

MEDICAL EDUCATION IN LONDON

INTRODUCTION

416. There are twelve medical schools in London which offer undergraduate instruction in medicine; some offer instruction over the full range of the course, while others provide clinical education only. The twelve schools admit between them over one-third of the students who enter preclinical courses in Great Britain* and, by providing clinical education for many additional students from other universities (particularly from Oxford and Cambridge), the London medical schools teach nearly one-half of those who graduate in medicine at British universities.† For convenience we shall refer to these twelve schools as undergraduate medical schools; although they undertake postgraduate teaching and research the bulk of postgraduate medical education in London is carried out in twelve institutes,‡ each of which offers instruction and facilities for research in a particular specialty, the Royal Postgraduate Medical School which covers a wide range of specialties, and the London School of Hygiene and Tropical Medicine. In addition, the Institute of Basic Medical Sciences offers postgraduate tuition, largely directed towards the Primary examination for the Fellowship of the Royal College of Surgeons, and training in research. About 60% of all the full-time postgraduate students in British faculties of medicine are to be found in London,* while a wide range of educational experience in medicine is provided there on a less formal basis. Each of the undergraduate medical schools, the Royal Postgraduate Medical School, and each of the postgraduate institutes (with the exception of the Institute of Basic Medical Sciences), is associated with a teaching hospital or a group of such hospitals, many of which are well endowed.§ The London School of Hygiene and Tropical Medicine is associated for the purposes of clinical teaching and research with the Hospital for Tropical Diseases, which is a part of the University College Hospital group.|| All the undergraduate medical schools and the postgraduate institutions are Schools of the University of London—the undergraduate medical schools and the London School of Hygiene and Tropical Medicine as separate entities, the postgraduate institutes and the Royal Postgraduate Medical School collectively as the British Postgraduate Medical Federation (see Table 11 on p. 186).

417. London medical degrees rightly hold a high reputation. There is evidence that London medical schools attract entrants of high ability, that the medical graduates of the University of London obtain higher professional

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* Information provided by the University Grants Committee.

† See Appendix 9, Table 4.

‡ The Institutes of Cancer Research, Cardiology, Child Health, Dermatology, Diseases of the Chest, Laryngology and Otology, Neurology, Obstetrics and Gynaecology, Ophthalmology, Orthopaedics, Psychiatry and Urology.

§ According to the Minister of Health the total of funds and investments held by the twenty-six teaching hospitals in London in 1966 was £32·4 m. (House of Commons Hansard, 14th April, 1967, Vol. 744, Written Answers, Col. 273.)

|| See Appendix 15.

qualifications, such as the Membership of the Royal College of Physicians, a shorter time after their first degree in medicine than do medical graduates of other Universities apart from those of Oxford and Cambridge,* and that they fill a larger share of Consultant posts in Great Britain.† The University of London as a whole has shown a remarkable degree of flexibility and adaptability to modern educational needs. Nevertheless the existence of any nexus as large, important and dispersed as that constituting the Faculty of Medicine of the University of London, particularly when located in a crowded national capital, inevitably involves many problems of organisation: medical education in London has produced many such problems, including those arising from the historical relationship between the professional and academic aspects of medicine.

418. All these problems must be seen against a background of hospital and medical school buildings which are often obsolete and usually overcrowded, and which must be extended or replaced on a large scale during the next generation. Adjoining sites are not always available at acceptable cost when required for expansion, and in every instance the alternative possibilities, of redeveloping the present site or choosing a different one, raise major questions of organisation and structure.

419. In default of a comprehensive and rational plan for future development in London, rebuilding could involve waste of scarce national resources not only of money but of human skill and effort. Failure to accept the need of an overall plan for development during the next thirty years or so might well lead to a serious decline in the importance of London as a centre of medical education.

420. We have heard much conflicting evidence from those engaged in medical teaching and research in London and we have attempted to elicit and understand the many different points of view held by people deeply concerned with the problems of medical education there. The existence of these problems has been obvious enough for many years, and there have been many attempts to solve them. But their roots go deep into history and no solution easily agreeable to all the interested parties is likely to be found. In such difficult circumstances only the radical action that could be taken as the result of the recommendations of a Royal Commission is likely to be effective if London's special position in medical education is to be related to the needs of the country as a whole and if the high standards of the past and present are to be maintained in the future.

421. Attempting to weigh the future together with the present and the past, we put forward what we believe to be realistic proposals, which we hope will serve the wider interests of medical education while maintaining London's special contribution in this field. A city of London's size and importance must play a major part in medical education if full use is to be made of the resources of the country as a whole; we have kept this in mind when formulating our proposals.

422. In the following paragraphs we review in some detail first undergraduate and then postgraduate medical education in London, and the

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* WILSON, G. M., *British Journal of Medical Education* 1967, I, 103–107.
† See Appendix 9, Table 8.

problems of organisation as they appear to us. We discuss what we believe to be the main points of difficulty and lead on to recommendations which we hope can be regarded as likely to ensure a rational and fruitful development of university medical education in London during the remaining part of the present century and beyond.

423. Appendix 9 includes statistical evidence on certain differences between medical education in London and in other centres in Britain, and Appendix 14 contains a history of medical education in the University of London, contributed by one of our members.

UNDERGRADUATE MEDICAL EDUCATION AND THE UNIVERSITY OF LONDON

424. Medical education in London began long before the foundation of the University of London and was substantially based upon a hospital teaching tradition of apprenticeship and practical tuition. Most of the London medical schools were founded by practising doctors, each as a relatively small part of a hospital devoted to clinical care.

425. Of the twelve undergraduate teaching hospitals in London two are mediaeval religious foundations, five resulted from philanthropic activity during the eighteenth century, and five appeared during the nineteenth century at a time when the development of medical education was becoming of special concern. The dates of foundation of some of their medical schools are difficult to determine precisely but probably the London Hospital Medical College, instituted in 1785, foreshadowed the modern pattern more closely than did the three schools which regard themselves as earlier foundations (St. Thomas's, St. Bartholomew's and Guy's). Six of the twelve made their appearance during the period 1828 to 1835 as the result, no doubt, of the ferment of interest in medical education at that time. The most recent foundations are St. Mary's (1854) and the Royal Free Hospital Medical School, formerly the London School of Medicine for Women (1874), though for a time there was an undergraduate medical school at the West London Hospital (see Appendix 14, Annex).

426. Had a university taken permanent root in London in, say, the fifteenth century (a period which saw the foundation of three universities in Scotland), the medical schools which gradually took shape in London would doubtless have been influenced by university ideas from their early days. But, as it was, the medical scene in London came to be dominated from the sixteenth century onwards by the professional bodies. The Royal College of Physicians of London was founded in 1518, and the Worshipful Society of Apothecaries of London dates from 1617; later the Royal College of Surgeons of England, founded in London in 1800, quickly gained a strong position. These professional institutions acquired a powerful influence throughout the country, particularly in the maintenance of standards of practice; the medical schools which began to appear in London naturally looked to them for guidance, and indeed could hardly have avoided it had

they so wished. The University established in London early last century, whose very foundation the Royal Colleges opposed, was in some ways an interloper which for a time could with impunity be almost ignored. In London, therefore, for historical reasons, the University has played a different and in many respects a smaller part in the development of medical education than have universities elsewhere. Medical education in London remained centred on the great voluntary hospitals, some of which were founded well before the University and have only slowly come to accept university attitudes and ideas. The historical survey given in Appendix 14 describes in general terms the complex way in which the University's importance in medical education in London slowly grew. Its growth was aided by the availability of public funds through the University Grants Committee from 1919 onwards, enhanced by the establishment of professorial units in the London medical schools in the early nineteen-twenties, and consolidated by the absence of provision in the National Health Service Act, 1946 for any facilities to be provided by a hospital authority to a medical school which was not part of a university. The process of setting up professorial units in the London medical schools, initiated as the result of the Haldane Commission's Report (1913), was greatly accelerated in consequence of the Goodenough Committee's recommendations* in 1944; it still continues.

427. A fundamental difference still exists, however, between the medical school-university relationship in London and that in all other centres in Great Britain; this difference gives rise, in our view, to the most important problem in medical education in London. The University of London is, unlike all others in Britain except that of Wales, a federal university made up of a large number of units. Among them are a number of large multi-faculty colleges which could in many respects be regarded as universities in their own right, while others—including the medical schools—are of much more limited size and scope; all, however, enjoy a large measure of autonomy. Thus while in Birmingham, for example, the medical school functions as an integral part of a multi-faculty institution engaged directly in research and teaching, and is indeed the University's Faculty of Medicine, this is not true of London. In London, undergraduate medical education is based on twelve semi-autonomous medical schools of varying size which have no direct relationship with a single multi-faculty teaching institution; even the two clinical schools which are associated with preclinical departments forming part of multi-faculty colleges are in fact largely independent of the colleges concerned. With so many medical schools in London in competition for funds (through the central authorities of the University) with numerous other institutions of the University, one cannot be surprised that despite much goodwill each of the medical schools in London has found great difficulty during the past thirty years or so in attracting financial support comparable with that made available to medical schools in other British centres. The differences in development between medical schools in London and those elsewhere which have thus been engendered ought not to be allowed to continue.

428. As we have said earlier in this Report (see Chapters 1 and 4), we believe that undergraduate medical education should be fundamentally a university

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* Report of the Interdepartmental Committee on Medical Schools, H.M.S.O., 1944.

function; we think it cannot be adequately carried out by relatively isolated medical schools. This view is widely held, often on the ground that medical students should mingle with students in other faculties; in our opinion, a much more important reason is the need for close contact between the medical, natural and social sciences at the teaching and research level. These sciences should be taught to medical students by first-class teachers actively pursuing research in their subjects. This presupposes strong departments in each subject, an object which is becoming increasingly difficult to achieve for most non-medical subjects, and even for the traditional preclinical subjects, in institutions where only medical students are taught, often in relatively small numbers. The difficulty will increase as new subjects are introduced into the courses of study available to medical students. The newer subjects, as well as the traditional ones, are increasingly in demand by students in university faculties other than medicine. Medical schools cannot hope to offer separately, from their own resources, adequate teaching in the range of options we believe will be desirable. The London medical schools are already finding difficulty in this respect and with the continual rapid advance in medical sciences they are unlikely to be able to maintain their first-rank position even in the traditional non-clinical subjects unless some organisational changes are made. Moreover, contacts between those engaged in clinical aspects of medicine and their non-medical colleagues in both science and technology are becoming increasingly important, as shown by recent advances in bio-engineering and in the application of computers to medicine. Finally, there are economic as well as educational advantages in teaching facilities which are common to students of science and medicine.

429. For the reasons given in the preceding paragraph we consider that the general pattern of the London medical schools, however well it may have served in the past, is no longer satisfactory and will become increasingly less so in the future. We are aware of the value of the close hospital connections which have always been a special feature of these schools and which have contributed substantially to their high reputation for clinical education. We have no wish to weaken these links, and indeed we hope that they will grow even stronger as academic teaching and hospital practice become increasingly close in method and spirit. We think the time has now come, however, when links between the medical schools and the University should be forged with even greater strength, in order to give these schools the access to the expanding world of scientific knowledge which is essential for their future life and development. We recommend (see paras. 437–438) that in future each medical school should aim to become an integral part of a single multi-faculty institution. If medical teaching in London is to evolve in this way the cost and extent of the necessary rebuilding will be substantial, but it will have to be spread over a period of years and in any event, as has been mentioned earlier in this chapter, extensive rebuilding of both hospitals and medical schools would soon have to be undertaken even if no organisational changes were proposed.

430. We do not underestimate the difficulties presented by the present geographical distribution of medical schools and multi-faculty institutions in London. The location of an undergraduate medical school and hospital alongside a multi-faculty university is generally represented as the ideal.

We recognise, however, that in many places—not only in London—this is no longer possible. Physical contiguity between the university and the hospital is not an overriding necessity provided that staff and students do not have to travel a long distance several times a day. Where university and hospital are physically separated, however, the question of the proper location of the non-clinical departments of the medical school arises. Clinicians in particular have argued that a high degree of integration and contact cannot be achieved between the clinical and non-clinical aspects of the course unless the medical science departments are alongside—or even within—the hospital buildings; there have been strongly-supported proposals that preclinical departments should be established in at least two of the London medical schools which at present offer clinical education only. We appreciate the strength of these arguments but, as we have pointed out in Chapter 4, there is an increasing number of subjects in which medical students ought to have some instruction which will be obtainable only in non-medical departments of the university; the idea that a medical student should have his entire education on one site is thus unrealisable where university and hospital are physically separated. We do not think any principle of supreme importance is involved. The increasing application of the sciences to clinical medicine will demand in the future that all university teaching hospitals should have within them a number of scientific units or departments working, like the already established units of clinical pathology and clinical chemistry, in immediate association with clinical departments: medical physics and clinical physiology can be mentioned as examples. These units will be concerned with the special medical applications of their science; they will doubtless play a part in clinical teaching but it does not follow that they should also provide the basic instruction in the medical sciences which every student must have. On balance we think the advantage lies in locating the basic medical sciences with the other sciences; if division is unavoidable, departments concerned with preclinical teaching should be with other university science departments rather than with the hospital. The continued existence in London of clinical teaching facilities some distance from their preclinical counterparts is a disadvantage which must be accepted if London's academic and clinical resources are to be fully used. This disadvantage will be mitigated if, as we recommend, clinical and preclinical teachers are members of one faculty and work in close cooperation in designing the medical curriculum and deciding major matters of academic policy. We think that under such an arrangement the clinical applications of the medical sciences can, despite some difficulties, be adequately taught. We recognise, however, that circumstances may exist in which the alternative arrangement may have to be adopted, at least for the time being. There may well be merit in variety, and uniformity for its own sake is not one of our objects. No doubt the developing pattern of education, as well as the rate of change, will vary among the medical schools in London. We believe, however, that a start can and should be made forthwith along the lines indicated later in this chapter.

431. The problems arising from the nature of the existing relationship between the University and the medical schools in London cannot easily be separated from those which spring from the multiplicity of the units in which medical education in London is provided. In addition to the points we have already considered in this connection, the fact that in London medical

education developed in independent hospitals has resulted in the existence of a larger number of separate clinical teaching departments than there would have been if medical education had been instituted from the first as an integral part of the University or of its constituent multi-faculty institutions.

432. Modern clinical education, like modern medical practice, needs for its effective pursuit the services of highly trained special staff and complex equipment, but trained staff are scarce and equipment is expensive and needs frequent replacement. In present circumstances each of the undergraduate medical schools in London may properly consider that its adequate functioning demands that its associated teaching hospitals should include a wide range of special units, for example in cardiac and thoracic surgery or in plastic surgery, together with staff skilled in other expensive developments at the growing edge of medicine. No reasonable person could expect that the full complement of such departments, each developed to a size that is economic and efficient, should be provided twelve times over within the compass of a few square miles. We think, however, that every modern medical school worthy of that description should have academic departments, with professorial heads, in all the main subjects of the undergraduate clinical course; such departments exist in nearly every British medical school outside London. The twelve London undergraduate schools at present have an incomplete and uneven range of clinical chairs. They are notably deficient in chairs of obstetrics and gynaecology, paediatrics, psychiatry and social medicine (see Appendix 9, Table 13). The resulting disabilities suffered by medical education in London will become increasingly grave as teaching in the medical curriculum grows more dependent on the services of highly trained special staff, on modern expensive equipment, and on the associated research activities. Maintenance of the present number of separate medical schools in London is thus no longer desirable or even, we think, possible.

433. A solution to the problems of rationalising the numbers and organisation of the London undergraduate medical schools, and of ensuring a satisfactory relationship between them and the University, can be found only in a radical reorganisation. We recommend, first, a scheme of concentration of these medical schools into half the present number and, second, their association with multi-faculty institutions of the University.

434. We recommend that the number of undergraduate medical schools in London be reduced to six, by combination according to the following scheme:

(a) St. Bartholomew's Hospital Medical College with the London Hospital Medical College.

(b) University College Hospital Medical School with the Royal Free Hospital School of Medicine (the rebuilding of the latter at Hampstead is planned).

(c) St. Mary's Hospital Medical School with the Middlesex Hospital Medical School.

(d) Guy's Hospital Medical School with King's College Hospital Medical School.

(e) Westminster Medical School with Charing Cross Hospital Medical School (the rebuilding of the latter at Fulham is planned—see para. 438(e)).

(f) St. Thomas's Hospital Medical School with St. George's Hospital Medical School (the rebuilding of the latter at Tooting is planned).

435. The teaching hospitals at present associated with these medical schools would preserve their identities, retain their traditional names and remain associated with the new schools formed by the amalgamations which we recommend. The two teaching hospitals associated with each new medical school would, however, need to consider in partnership the rationalisation of their departments and services so that adequate provision could be made for all clinical facilities for teaching and research with due regard to efficiency and economy. The rationalisation of their services to their local districts should not present undue difficulty since the communities which they either do at present, or will in future, serve are reasonably contiguous. The present number of medical students in the schools in each pair, and the numbers of beds in the hospitals associated with them in 1967, are shown in Table 10 (p. 179).

436. In this way six medical schools could be developed in the short term, each with an annual preclinical intake of about 200 medical students. We recommend that the fusion of each of these pairs into a single medical school with a single governing body and academic board be put in train as soon as possible, their instruments of incorporation being adjusted as necessary for this purpose and to permit the accession of postgraduate institutions (see paras. 451–454). We recommend that the unification of staffing and organisation should start immediately and that as and when any new buildings are sanctioned they should be designed for the use of the combined school as a whole. The amalgamation would in each case allow the establishment of larger and more economical preclinical departments than at present and a greater opportunity for the development of adequate departments in the clinical specialties. Reorganisation along these lines, together with changes we suggest later in the pattern of hospital services in the Metropolitan area, should in our view ensure the availability of enough patients, with a wide enough range of illnesses, to meet fully the future needs of clinical teaching in the London medical schools.

437. We recommend that each of the new London medical schools formed by the mergers listed in paragraph 434 should aim to become in due course, like every medical school elsewhere in Britain, the faculty of medicine of a multi-faculty university institution, standing with the other faculties of the institution for academic, administrative and financial purposes; the governing body of the medical school would then be merged with that of the multi-faculty institution concerned. We recommend that steps should be taken as quickly as possible by each of the new combined medical schools to form a strong association with a multi-faculty university institution, particularly to promote the development of shared teaching and research facilities in all subjects which contribute to, but are not unique to, medical education. The multi-faculty institutions should try to orient their teaching towards the needs of medical students, and the medical schools and institutions concerned should discuss fully with each other all proposals for new buildings for subjects of common interest.

TABLE 10
Recommended Amalgamation of London Undergraduate Medical Schools

Medical School	*No. of Beds in Associated Teaching Hospital Group**	*Number of Medical Students who began courses in 1966–67*		
		Pre-medical	*Pre-clinical*	*Clinical†*
St. Bartholomew's Hospital Medical College	818	22	115	68‡
The London Hospital Medical College	1,006	—	80	90
University College Hospital Medical School	1,124	—	95§	86
Royal Free Hospital School of Medicine	743	31	93	91
St. Mary's Hospital Medical School	868	21	70	85
The Middlesex Hospital Medical School	1,006	27	85	110
Guy's Hospital Medical School	1,591	17	100	122
King's College Hospital Medical School	1,873	—	127‖	73
Westminster Medical School	1,089	—	—	57
Charing Cross Hospital Medical School	1,007	—	48	45
St. Thomas's Hospital Medical School	1,394	16	60	111
St. George's Hospital Medical School	893	—	—	54
Total	13,412	134	873	992

* Source: *The Hospitals' Year Book 1968*. Not all these beds are necessarily available for teaching.

† Including students whose preclinical education had been undertaken elsewhere.

‡ Numbers were affected in 1966–67 by changes in the admission timetable; otherwise this figure would have been about 110.

§ Preclinical students at University College: not all go to University College Hospital Medical School for their clinical education.

‖ Preclinical students at King's College: not all go to King's College Hospital Medical School for their clinical education.

The exact location of such buildings in each instance will have to be determined in the light of finance and sites available ; we think that accommodation and sites now used for undergraduate medical teaching may often be profitably given over to postgraduate work in the future (see para. 456). The essential principle that should be followed is that all arrangements made for sharing facilities, and all plans for new building for subjects relevant to medicine, should be consistent with the development of close association with, and eventual integration of the medical school into, the multi-faculty institution concerned.

438. Most of the new combined medical schools will, we think, be able to develop without great difficulty a relationship such as we have recommended with a suitable multi-faculty institution, though in every case there will be major problems to be solved before full integration can be achieved. In our view, the following pattern of association would be reasonable and practicable:

(a) The St. Bartholomew's–London combination might well aim to become in due course the medical faculty of Queen Mary College, which is situated less than a mile from the London Hospital and has been considerably extended and developed in recent years. We appreciate that the preclinical departments of St. Bartholomew's Hospital Medical College are in recently constructed buildings with room nearby for more, but we think that in deciding on the location of new buildings the authorities concerned should give the greatest possible weight to the advantages of proximity to Queen Mary College; if new preclinical buildings for the combined medical school were erected on or near the site of that College, rather than alongside one of the hospitals, the space now occupied by preclinical buildings could be freed for other purposes (see para. 456). If building on or near the Queen Mary College site were to prove quite out of the question then we think the preclinical departments of the new school should be located on the London Hospital site, because of its nearness to Queen Mary College. We think that the new school ought if possible to be integrated with a college of the University of London, and that Queen Mary College would be very suitable for this purpose; moreover, physical expansion is possible in the general area in which it is situated. The further development of the natural and behavioural sciences in Queen Mary College should at the same time be stimulated and encouraged.

(b) The University College–Royal Free combination might well aim to be integrated in due course with University College, which already possesses substantial preclinical departments and immediately abuts University College Hospital. The necessary enlargement of these departments may not be immediately possible on their present site, but should be provided for when replanning takes place.

(c) The Middlesex–St. Mary's combination might well aim to become in due course the medical faculty of Bedford College, which occupies an open site in Regent's Park. Bedford College is small at present but is growing and should be encouraged to devote particular attention to the development of strong departments in those fields of study relevant to medical education. The preclinical departments of St. Mary's Hospital Medical School are housed in old buildings; reconstruction cannot be long delayed, and when it is authorised rebuilding should be planned with a view to meeting most conveniently the needs of the combined medical school; the location of the new buildings will clearly depend, among other things, upon site availability.

(d) The school formed by combining Guy's and King's College Hospital Medical Schools might well aim to be integrated in due course with King's College, which already provides preclinical teaching facilities. The new school should aim at an annual intake of about 200 medical students, in addition to whatever intake of dental students may be thought appropriate. Expansion on the cramped King's College site would present problems but part of the College's activities may in any case have to be moved elsewhere fairly soon; we recommend that if this happens consideration be given to the construction of new buildings for medicine and science near the site of King's College Hospital.

(e) The Westminster–Charing Cross combination might well aim to become in due course the medical faculty of the Imperial College of Science and Technology. The range of faculties in the College will, we hope, be considerably widened as time goes by. The plans for a new building for the new Charing Cross Hospital in Fulham include provision for preclinical teaching departments which, we understand, could accommodate an annual intake of only 70–80 students a year and could not be expanded on that site. Such an intake is in our view too small for a medical school of the type we wish to see develop in the future (see para. 371). We understand that planning and construction of the new hospital building is so far advanced that abandonment of the planned provision for preclinical teaching departments would be impracticable. We must accept this. We recommend, however, that every effort should be made in concert with Imperial College to increase the annual intake in the short term. Advantage might perhaps be taken of facilities, e.g. in biochemistry, already existing in Imperial College. At an appropriate time in the future the relocation and further expansion of the preclinical departments ought to be considered. In the reorganisation of postgraduate institutes and special hospitals which we recommend later (paras. 449–459) a substantial part of the Chelsea site hitherto reserved for postgraduate teaching and research will no longer be required for that purpose. This site, which lies between the Fulham hospital site and Imperial College and is adjacent to the Royal Marsden and Brompton Hospitals, would provide a suitable location for preclinical departments of a size appropriate to a modern medical school. We recommend that if no suitable accommodation is available on the main Imperial College site the preclinical departments of the new Westminster–Charing Cross medical school should be built on the freed portion of the Chelsea site.

(f) The St. George's–St. Thomas's combination could, we think, reasonably hope to become in the course of time the medical faculty of a new multi-faculty institution in South-West London. Such an institution might well develop out of what is now the Chelsea College of Science and Technology, a small School of the University of London which has teaching resources in a number of fields related to medicine. We understand that the College's present site is recognised to be inadequate and that the College will have to move sooner or later; a suitable site might be found in the Tooting area near the new St. George's Hospital. Time would be necessary to build up the scientific departments of the College to a point where they could enter into full partnership, but to this the staff of the present St. Thomas's Hospital Medical School in particular could make an important contribution. We recommend therefore that with such an aim in view building for preclinical departments for the combined St. Thomas's–St. George's Medical School with an annual entry of about 200, as well as provision for dental and other faculties which may need accommodation with the medical school, should take place as quickly as possible in the Tooting area. Preclinical teaching at St. Thomas's should be discontinued when the new buildings at Tooting become available, and the space thus freed used for postgraduate teaching and research (it might perhaps accommodate the Institute of Urology—see para. 453(f)). If the combined medical school could not be integrated with a college of the University of London two other possibilities might be considered, though we think that neither would be as satisfactory as that which we have envisaged above. First, the new school could be integrated in due course with the University of Surrey; the difficulties of communication between the University's main site at Guildford and the two London hospital sites would, however, be formidable. Secondly, preclinical education might be discontinued at St. Thomas's and the two clinical schools might, separately or jointly, supplement the clinical teaching facilities likely to be available at Oxford and Cambridge (see Chapter 7). In our view, however, a concentration of Oxford and Cambridge students into two London clinical schools would not be desirable; moreover, the form of association between the two London clinical schools and the Universities of Oxford and Cambridge would have to be very close if the new arrangements were not to maintain, or even increase, the disadvantages of the present situation.

439. The reorganisation of undergraduate medical education in London which we have recommended represents a radical departure from the existing pattern and will doubtless meet opposition on the ground that it cuts across and in some respects appears to run counter to some of the traditions of individual London medical schools. Tradition as a unifying force in any institution has a value which should not be underestimated, but maintenance of a tradition should not be allowed to obstruct progress. The important traditions of the London schools are in fact the traditions of service and of clinical training in the great hospitals on which they have been based. These will remain unimpaired by the reorganisation we propose. Indeed, the schools should gain in strength as the merging into larger groups enables their teaching hospitals better to meet the challenge of new advances in medicine and, by avoiding undue fragmentation and duplication, to retain and enhance in the future the proud place which they have occupied in the past among the medical schools of the world: that place cannot be maintained by adhering to the old system of small independent units isolated from the main stream of university activity.

POSTGRADUATE MEDICAL EDUCATION IN LONDON

440. As is pointed out in Appendix 14, postgraduate medical education in London grew up in special hospitals which were founded mainly in the nineteenth century. Many of them came into being because of the reluctance of the great general hospitals to provide facilities for the newly-developing specialties.* In other cities there was only one medical school and the special hospitals usually made an arrangement with the general teaching hospital whereby the special subjects were mostly or exclusively treated and taught in the appropriate special hospital. In London, however, there was no single undergraduate teaching hospital which could claim to be the one with which to be associated, and in any event the view prevailed that postgraduate medical education should to some extent be segregated from undergraduate education. The Report of the Athlone Committee (1921) and the early tendency of the University of London to set up special institutes of advanced research in the non-scientific faculties, gave some support to the idea held in the undergraduate schools that separate provision was desirable for the two stages of medical education, and as is pointed out in Appendix 14, many people in London thought the special hospitals and their related postgraduate teaching units would suffer if they were linked with general teaching hospitals and undergraduate medical schools. Accordingly the special hospitals remained unattached to any general teaching hospital and undertook no undergraduate medical teaching. The large size and the wealth of London was such that many of its special hospitals came to occupy a position of outstanding distinction in their defined fields. The specialist Consultants at the general teaching hospitals competed for the privilege of being also on the staff of the appropriate special hospital. If a young man wished to train in one of the highly specialised aspects of medicine a period of service at the special hospital, both in junior and in senior posts, became desirable and almost essential. Courses of instruction were also instituted at these special hospitals.

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* STEVENS, R., Medical Practice in Modern England, pp. 26–27. Yale University Press, 1966.

441. An important break with tradition came in the nineteen-thirties with the establishment of the Royal Postgraduate Medical School and its recognition as a school of the University of London in 1934: this medical school was associated with Hammersmith Hospital (then administered by the London County Council), this arrangement being the nearest practicable alternative to what its sponsors thought to be the ideal arrangement, namely attachment to a general hospital in the centre of London.

442. When the Minister of Health took over the hospitals in 1948, those designated as teaching hospitals in London included, as well as the Hammersmith Hospital group, twelve special hospitals, or groups of special hospitals, all of which were undertaking postgraduate medical teaching in some form. The Royal Cancer Hospital, the Maudesley Hospital and the Bethlem Royal Hospital had for some time been established as schools of the University, and the Royal London Ophthalmic Hospital, the Hospital for Sick Children and the National Hospital for Nervous Diseases had on their staff teachers recognised by the University.

443. The Ministry of Health has pointed out to us that many of the special postgraduate hospitals are too small to stand alone in present-day conditions. A number of plans have been promulgated for bringing them and their associated institutes together into groups. Some of these plans envisaged that the groups thus formed would have no association with general teaching hospitals, but in 1944 the Goodenough Committee thought the ideal pattern for the development of postgraduate medical education in London would be the creation of " a postgraduate hospital centre, consisting of a general hospital of appropriate size and a number of separate institutes for each of the principal branches of Medicine ", near to " the central buildings of the University, the Royal Medical Colleges, the Royal Society of Medicine and other medical and cultural societies ".* The Committee envisaged that the Royal Postgraduate Medical School would be an integral part of the proposed centre; its Report stated, " the obstacles to the achievement of this ideal in the near future seem insuperable. Nevertheless, on a long view, it is desirable that the hospital authority for London should make the ideal one of its guides in the preparation and carrying out of its plans under the national health service ".† The Committee also recommended that the teaching and research activities of the special hospitals should be brought together into institutes which were separate from the hospitals. This recommendation was implemented and in due course the institutes, together with the Royal Postgraduate Medical School, were grouped to form the British Postgraduate Medical Federation, which was established by the Senate of the University of London in 1945, incorporated in 1947 and admitted as a School of the University in that year. Action on the proposal for a single postgraduate medical centre was slower. In his Report for 1961–62 the Principal of the University of London wrote (pp. 41 and 42):

> " If anything at all was to be done after the war . . . it was clear that the only possible course was for the Postgraduate Medical School to remain at Hammersmith and for the specialist institutes to be developed in close proximity to their associated teaching hospitals; this in fact was what happened in the case of all the fourteen clinical institutes except one. When, however, the Minister of Health last year

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* Report, p. 226.
† Report, p. 226. (See also Appendix 14, p. 303).

began the task of preparing a ten-year hospital development plan, a re-examination of the basic problem was necessary, and this was entrusted to a Study Group appointed jointly by the Minister and the University Grants Committee, on which the University and the British Postgraduate Medical Federation were represented. While realising the important advantages which would accrue if the specialties could be studied at postgraduate level in the context of general medicine, the Study Group was forced to adopt a more pragmatic approach and rapidly came to the conclusion that the Postgraduate Medical School would have to stay wedded to the Hammersmith Hospital. It went on to explore the possibilities of bringing the remaining thirteen clinical institutes* and their associated hospitals together in groups in the knowledge that certain sites and buildings already owned by the Minister might be made available for this purpose.

“ A well-defined group already exists near the University on the eastern side of Southampton Row, viz. the Institute of Child Health and the Hospital for Sick Children, the Institute of Neurology and the National Hospital, the Institute of Laryngology and the Royal National Throat, Nose and Ear Hospital and the Institute of Dental Surgery and the Eastman Dental Hospital. To this group will be added the Institute of Ophthalmology and Moorfields Hospital which will be rebuilt on the site vacated by the Royal Free Hospital when it moves from Gray's Inn Road to Hampstead.

“ The Institute of Obstetrics and Gynaecology is based on Hammersmith Hospital, Queen Charlotte's Hospital and the Chelsea Hospital for Women. The first two are relatively near each other and the Study Group decided that the proper course was to rebuild Chelsea Hospital for Women on an available site adjoining Queen Charlotte's Hospital, thus releasing a site . . . adjacent to two other institutes and their associated hospitals, viz. the Institute of Cancer Research and the Royal Marsden Hospital and the Institute of Diseases of the Chest and the Brompton Hospital. On this site, the site of an adjacent Regional Board Hospital and other land which it is hoped to acquire, the Institute of Urology with its three associated hospitals, and the Institute of Dermatology together with St. John's Hospital for Diseases of the Skin will be rehoused.

“ This leaves only three institutes and specialist hospitals for consideration. It was agreed that the Institute of Psychiatry and the Maudsley Hospital should remain at Denmark Hill and that, while the Institute of Cardiology and the National Heart Hospital should be allowed to rebuild to a certain extent on their existing site, they should move ultimately to join with the [Chelsea] group. The Institute of Orthopaedics and the Royal National Orthopaedic Hospital do most of their work at their outstation at Stanmore and the new buildings for the London branch must be situated in a place from which there is convenient access by road to Stanmore. So far, a solution of this particular site problem has not yet been found ”.†

444. Acting on the recommendations of the Study Group mentioned in the above quotation the Minister of Health announced in 1961 that the special postgraduate hospitals and institutes would as far as possible be brought together in two groups—one in the Holborn area and one at Chelsea—for which the nuclei already existed; some of the institutes, and the Royal Postgraduate Medical School, were excluded from these rearrangements. The Ministry of Health and the University Grants Committee then jointly set up a Committee under the chairmanship of Sir George Pickering (Regius Professor of Medicine at Oxford) “ to consider in principle and advise on the advantages which can be secured from the proposed grouping of postgraduate institutes and hospitals, and their joint use of facilities ”. The Committee, reporting the following year,‡ went carefully over the ground leading to the Minister's

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* Twelve medical and one dental.

† The Royal National Orthopaedic Hospital, with the Institute of Orthopaedics, was later added to the proposed Holborn group.

‡ University Grants Committee Reports on Public Health and Medical Subjects, No. 106. H.M.S.O., 1962.

decision and endorsed his proposals. The Committee noted that the special hospitals had originated in a previous age and that current thinking preferred the association of special units with general hospitals. The Committee were aware, however, of the considerable fear among the staffs of the institutes that the identity of their special subject, and the attractions of its special hospital for the patients and students who were needed for its continued advancement, would be lost in a larger aggregate. The Committee agreed that a separate existence could best be preserved by grouping the institutes and special hospitals together in the Holborn and Chelsea areas.

445. No suitable site could be found for realisation of the Holborn scheme as a whole. Neither of the two sites available for redevelopment near Holborn was big enough to accommodate all the institutes and hospitals concerned. We understand that the scheme for a Holborn group has now been abandoned.

446. The scheme for the Chelsea group has had the advantage of a suitable site, though from the beginning this clearly could not be made available for the new postgraduate group without much preliminary redevelopment. The Ministry of Health told us in September 1966 that building would be unlikely to begin before 1972. Recently the Institute of Dermatology and St. John's Hospital for Diseases of the Skin have expressed a wish to leave the scheme and to become associated with a general teaching hospital.

447. Thus, despite the lengthy consideration that has been given to the organisation of postgraduate medical education in London, major problems remain to be solved. The institutes comprising the British Postgraduate Medical Federation, which are listed together with their associated hospitals in Table 11 (p. 186), are a varied group: one, the Institute of Basic Medical Sciences, which is in some senses an anomalous member, lacks a hospital. The London School of Hygiene and Tropical Medicine is a postgraduate medical school of the University of London outside the British Postgraduate Medical Federation. Only a small minority of the postgraduate institutions and their associated hospitals are housed in reasonably modern and adequate buildings, and the present situation clearly cannot be allowed to continue indefinitely. Apart from the urgent central question of the provision to be made for the institutes and hospitals intended to be covered by the Holborn and Chelsea schemes, there are problems arising from the separation of undergraduate and postgraduate teaching. We have referred earlier to the incompleteness of professorial staffing in the London undergraduate medical schools: one reason for this deficiency is the multiplicity of separate undergraduate schools sharing the limited financial resources available to a single university which has also to provide a professorial complement in the postgraduate institutes. We think that in London the lack of a direct relationship between the postgraduate institutes and special hospitals on the one hand, and the undergraduate medical schools and general teaching hospitals on the other, needs serious reconsideration.

448. As we indicated in paragraph 440, there is a long standing view, held by some at least in London, that undergraduate and postgraduate education flourish best if they are segregated to some extent. Some of the staff of the special hospitals in London still fear that any close association with the large

TABLE 11

The British Postgraduate Medical Federation, London, 1967
(excluding the Institute of Dental Surgery)

Institute	*Main Associated Hospital(s)*	*Number of Beds in Associated Hospital Group**
Basic Medical Sciences	—	—
Cancer Research	Royal Marsden	307
Cardiology	National Heart	81
Child Health	Sick Children	447
Dermatology	St. John's	69
Diseases of the Chest	Brompton and London Chest	644
Laryngology and Otology	Royal National Throat, Nose and Ear	244
Neurology	National and Maida Vale	309
Obstetrics and Gynaecology	Queen Charlotte's Maternity, and Chelsea Hospital for Women	327
Ophthalmology	Moorfields	350
Orthopaedics	Royal National Orthopaedic	414
Royal Postgraduate Medical School	Hammersmith and St. Mark's	796
Psychiatry	Maudsley and Bethlem Royal	503
Urology	St. Peter's, St. Paul's and St. Philip's	134
Total Number of Beds		4,625

* Source: *The Hospitals' Year Book, 1968.*

general teaching hospitals could lead to the complete absorption and loss of identity of the special hospitals. The suggestion has been made that likewise an association between a postgraduate institute and an undergraduate medical school could lead to a dispersal of the special interests of the postgraduate institute and even to complete domination and absorption by the more general interests of the undergraduate school.

449. We do not accept the view that separation between undergraduate and postgraduate education is desirable in principle, nor do we think that there need be any foundation for the fears to which we have alluded. After considering these and related matters we have come to the conclusion that close links should be established as quickly as possible between the special hospitals and the general teaching hospitals, and between the postgraduate institutes and the undergraduate medical schools. Our proposals are set out in more detail in paragraphs 453 and 454.

450. If the establishment of such links is followed, as we hope it will be, by the rebuilding of the special hospitals in close geographical proximity to the general teaching hospital groups (or possibly embedded within the structure of large general teaching hospitals), the question whether the special hospitals should retain their present names is one that can be left to the future. We do not believe that any insuperable problem need arise in keeping alive the name of a special hospital; there should be little difficulty in ensuring that the name continues to exist if this is thought to be desirable. Nevertheless we should make clear that we do not think the special hospitals should continue to be governed by separate authorities. The present position of the Hospital for Tropical Diseases, embedded in St. Pancras Hospital (itself a part of the University College Hospital group), is an interesting example of an arrangement which in practice has been most effective. The Hospital for Tropical Diseases is administered by the Board of Governors of University College Hospital, but the members of its professorial unit are members of the staff of the London School of Hygiene and Tropical Medicine. We have been told by the authorities of both University College Hospital and the London School of Hygiene and Tropical Medicine that the arrangements which have evolved in this connection work well.* If, in the large teaching hospital groups that we envisage, wards or hospital blocks are clearly assigned to the special subjects we believe that only good can come from the close association of general and special interests. For example, the proper development of orthopaedics requires an associated trauma service, but this cannot be effective in the absence of thoracic surgery, neurosurgery and the other resources available in a general teaching hospital group. We envisage that, if our proposals are adopted, the special hospitals will be administered as part of the general teaching hospital groups associated with undergraduate medical schools.

451. We think likewise that the postgraduate institutes should be linked to and ultimately become a part of the combined medical schools that we have proposed earlier in this chapter. The Pickering Committee recognised† that both the standard of postgraduate medical education in London, and the rate of advance of knowledge in the disciplines represented by the activities of the postgraduate institutes and their associated hospitals, were in danger because of the relative isolation of these institutes and hospitals. We have more than once been told by individual members of the staff of postgraduate institutes that the next development in their special subjects might well come not from the work of a special institute or in a special hospital but quite possibly from investigations and observations made in a general hospital and medical school or in a general research institute. The recent decision of the Institute of Dermatology and St. John's Hospital for Diseases of the Skin to request permission to withdraw from the Chelsea group and to become associated with a general teaching hospital is, in our view, a pointer in the right direction. We believe that other postgraduate institutes need similar associations not only with general hospitals and medical schools but also with laboratories concerned with basic sciences. The grouping that we propose could provide for such close associations. The institutes, associated with the

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* An outline of the present situation of the Hospital for Tropical Diseases, and of the evolution of the administrative arrangements up to the present time, is given in Appendix 15.

† Report, pp. 6–8.

undergraduate medical schools, would presumably preserve their identity and we hope they would retain a reputation, as centres of excellence in their special fields, over areas much wider than the localities of the medical schools with which they had become associated. For all academic, financial and administrative purposes, however, they should become an integral part of the medical school. With advances in medicine, postgraduate teaching and research units in additional specialties are likely to be needed; additional units in some of the specialties already represented in the present special hospitals (e.g. cardiology and paediatrics) are also likely to become necessary. These newcomers will surely develop as units within the general teaching hospital groups. We are aware of the fear expressed by some that to end the separate existence of the postgraduate institutes in the British Postgraduate Medical Federation might endanger the development of their disciplines through their becoming submerged in the general interests of the medical schools. But we believe that with the arrangements we recommend for the organisation of postgraduate medical education in the country as a whole (see Chapter 3) such fears would prove unfounded.

452. As the present postgraduate institutes become part of general medical schools and the special hospitals move into closer physical association with general hospitals, and as new institutes or units follow the same pattern, consideration will have to be given to the future function of the British Postgraduate Medical Federation, a name which in any case is not wholly appropriate since it cannot and does not claim to represent postgraduate interests over the whole country; we recommend that no more institutions be attached to the Federation.

453. We have no intention of laying down a precise scheme of association for the special hospitals and institutes. Provided that a reasonable balance is maintained among the general teaching groups in the allocation of these special facilities, we think that specific associations should be determined in the light of natural affinities, accommodation requirements and rebuilding opportunities. As examples of associations that might be suitable, but without prejudice to other proposals that might be put forward in the light of a fuller examination of needs and possibilities, we suggest the following:

(*a*) Moorfields Hospital and the Institute of Ophthalmology might become part of the teaching group based on Queen Mary College and St. Bartholomew's and the London Hospital Medical Colleges. Moorfields Hospital and the Institute will need rebuilding fairly soon; they could and should be rebuilt in relation to one of the main constituents of a teaching group as this.

(*b*) The Royal National Throat, Nose and Ear Hospital and the Institute of Laryngology, together with the Hospital for Sick Children in Great Ormond Street and the Institute of Child Health, might become part of the University College and Royal Free teaching group. The Royal National Throat, Nose and Ear Hospital and the Institute of Laryngology are both in old premises which need rebuilding, and the rebuilding should be designed to bring the Hospital and the Institute into close association with one of the components of the teaching group. The Hospital for Sick Children in Great Ormond Street and the Institute of Child Health are housed in substantial and modern buildings which do not seem to call for priority in rebuilding at present. We think that special facilities for paediatric teaching should be more widely available in London than they are now. We recommend that Queen Elizabeth's Hospital Hackney, which was recently transferred to the Great Ormond Street Group, should become part of the hospital group associated with the proposed St. Bartholomew's–London medical school.

(*c*) St. John's Hospital for Diseases of the Skin and the Institute of Dermatology, together with the Royal National Orthopaedic Hospital and the Institute of Orthopaedics, might become part of the Bedford College, St. Mary's and Middlesex teaching group. Both St. John's Hospital and the Institute of Dermatology need rebuilding and the new buildings should be situated near one of the major centres of a teaching group. The Royal National Orthopaedic Hospital and the Institute of Orthopaedics have two centres, one in Great Portland Street which will need rebuilding before long, and the other at Stanmore. The latter is useful and should be retained, but as far as possible the Orthopaedic Hospital and the Institute should be geographically associated with a teaching group.

(*d*) The Maudsley Hospital and the National Hospital, Queen Square, together with the Institute of Psychiatry and the Institute of Neurology, could be part of the King's College and Guy's teaching group. The National Hospital, Queen Square, and the Institute of Neurology are in old buildings which will need replacement in the reasonably near future. We realise that plans are well advanced for rebuilding them on their present site, but this seems to us to have no particular virtue except that it happens to be available. We think the new buildings should be associated with one of the major components of a teaching group.

(*e*) The Royal Marsden Hospital and the Institute of Cancer Research, the Brompton Hospital and the Institute for Diseases of the Chest, and the National Heart Hospital and the Institute of Cardiology might be part of the Imperial College, Westminster and Charing Cross teaching group. We see no reason why the Royal Marsden Hospital and the Institute of Cancer Research should not remain in Chelsea. Proposals have, we know, been made for closer association between the Brompton Hospital and the National Heart Hospital; we regard this as a desirable development. We should like to see the hospitals rebuilt together in close proximity to a general teaching hospital, but if there is no practical possibility of doing this in the foreseeable future the rebuilding might well take place on part of the site originally assigned to the Chelsea scheme.

(*f*) The Institute of Urology and St. Peter's, St. Paul's and St. Philip's Hospitals urgently need rebuilding and this should be done on the site of a major teaching hospital. They might become part of the St. Thomas's–St. George's group (see para. 438(*f*)). If rebuilding on an appropriate site were impracticable in the immediate future, some interim means should be found of bringing the Institute and the three special hospitals together under one roof.

(*g*) We have given much consideration to the development of the Royal Postgraduate Medical School and the Hammersmith Hospital. Should a new undergraduate medical school in London appear to be needed at some time in the future, the Royal Postgraduate Medical School and the Hammersmith Hospital could with advantage form the basis of such a development, serving a community extending westwards through Brentford and Chiswick and perhaps accompanied by some change in the regional organisation we propose for hospital administration in London (see paragraphs 479 and 480). The creation of a new undergraduate medical school and an extended general hospital in this area is not something we would recommend at this time, although we think it may well happen eventually. Meanwhile St. Mark's Hospital for Diseases of the Rectum and Colon could be rebuilt in association with Hammersmith Hospital and Queen Charlotte's Maternity Hospital, and the Institute of Obstetrics might also be associated with this group. We do not in general favour the separation of postgraduate from undergraduate teaching but in the case of the Royal Postgraduate Medical School this seems for the present to be inevitable.

454. The Institute of Dental Surgery, associated with the Eastman Dental Hospital, is the only London postgraduate clinical institute remaining outside the system of linking we have recommended above. Although dental education does not come within our terms of reference we suggest that these two institutions should be associated with one of the general teaching hospital groups—perhaps that based on Imperial College, Charing Cross and the Westminster—in which there is at present no dental school. If this were done

the group based on Bedford College, St. Mary's and the Middlesex would be the only one of those we recommend which lacked a dental school. We venture to make this recommendation, even though strictly it is *ultra vires*, because we think there is advantage both to medical education and to the education of dentists in the association of medical and dental schools.

455. The future of the Institute of Basic Medical Sciences, the remaining member of the British Postgraduate Medical Federation, is discussed in paragraphs 460–462.

456. Changes such as those which we have proposed will take a long time to complete. But we consider that any programme of rebuilding for these special hospitals and institutes should be devised in accordance with the principle we have laid down. We emphasise that the particular attachments we have suggested have been determined mainly by geographical considerations which will make association with general medical schools and teaching hospitals easier during the period before rebuilding is possible. The availability of sites adjacent to the main undergraduate teaching hospitals, permitting immediate building, might well influence the pattern of attachment of special hospitals and institutes. The consolidation of undergraduate medical schools which we have recommended will set free accommodation on some of the undergraduate teaching hospitals' present sites. We should expect that the buildings and sites thus made available could generally be used to expand the teaching, and especially the research, facilities already available in the undergraduate hospitals. In some instances the buildings and sites might accommodate postgraduate institutes; the special hospitals concerned could be brought to the site as opportunity offered.

457. The proposals we have made in paragraphs 449–453 are incompatible with the realisation of the plans for the proposed Chelsea group of special hospitals and postgraduate institutes. Such a grouping would be contrary to the principles we have accepted for the future development of medical education in London, and indeed this grouping has been widely regarded as far from ideal. In a sense the recommendations of the Pickering Committee and the decisions of the then Minister of Health represented a valiant attempt to implement, despite the many financial and other limitations of the time, the views on postgraduate medical education earlier set out by the Goodenough Committee.* But we have made clear above that the Goodenough Committee did not think that its proposals in this respect were the ideal solution to an apparently intractable problem.

458. We recognise that any logical reorganisation of the facilities for postgraduate medical education and training, in relation to the special hospitals and institutes in London, will take a long time to achieve. Nevertheless we consider that the scheme we have outlined, which is designed to approach the ideal as we see it, should be accepted forthwith as a general plan, so that short-term *ad hoc* solutions to particular facets of the problem shall not frustrate and prevent the realisation of the long-term proposals. For this reason we recommend that the re-siting of the special hospitals and postgraduate institutes as set out in the Pickering Report be not proceeded with.

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* Report, pp. 226–228.

In making this recommendation we wish, however, to pay tribute to those who have devoted much time, energy and thought to considering the best arrangements that could be regarded as realistic for short-term developments in postgraduate medical education in the University of London during the difficult period since the Second World War.

459. We recommend that in future the provision required within each group for special teaching and research facilities in particular subjects should be kept under continual review, and that in addition to the machinery proposed for the country as a whole in Chapter 3, permanent machinery be set up for co-ordinating the provision of such facilities among the university and hospital authorities concerned in the London area. Where conditions are specially favourable the facilities for research and teaching in particular subjects should be allowed to expand beyond what would normally be appropriate for a university or major hospital authority. Such a development should neither be prevented where it is appropriate, nor attempted where it is not justified.

THE INSTITUTE OF BASIC MEDICAL SCIENCES

460. A problem of quite a different kind is raised by the Institute of Basic Medical Sciences at the Royal College of Surgeons of England. This Institute has two main functions. The first is postgraduate teaching by the provision of courses in basic medical sciences, essentially anatomy, pathology, physiology and pharmacology with the various subdivisions of these subjects. Most of those who attend these courses come from overseas and are preparing for the Primary examinations for the Fellowship of the Royal College of Surgeons or the Fellowship of the Faculty of Anaesthetists, but courses are also given in basic medical sciences applied to dentistry, for candidates for the Fellowship in Dental Surgery. A short course is also held for candidates preparing for the Membership examination of the Royal College of Obstetricians and Gynaecologists. Much of the instruction is routine teaching not usually found in a university postgraduate department. The Institute's second function is to provide facilities for postgraduate students wishing to pursue a research programme under supervision in the Institute's departments, with a view to obtaining a Ph.D. or other higher degree.

461. The Institute inevitably suffers from lack of contact either with patient care on the one hand or with university scientific departments on the other hand, though efforts to overcome this isolation have been made in the form of joint appointments between the Institute and appropriate university departments. The Institute's membership of the British Postgraduate Medical Federation seems to be out of keeping with the intention of the Goodenough Committee,* which envisaged that the constituent institutions would be predominantly clinical ones based on postgraduate teaching hospitals. In our view the present position of the Institute in the Federation is anomalous and we are not convinced that the facilities available in the Institute are being used to the best educational effect. We recognise that some good research work is being done at the Institute and that Ph.D. students are

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* Report, p. 229.

being trained there; but we do not believe that the Institute as at present constituted provides the kind of university teaching, combined with research, that we advocate in general.

462. Our proposals in Chapter 3 envisage that organised courses in the medical sciences will be provided for postgraduate students who need them. The needs which the Institute of Basic Medical Sciences was set up to meet have changed considerably since its foundation, and will change still further if our proposals for postgraduate training in Chapter 3 are accepted. We think the Institute can play an appropriate part in medical education in the future if its constitution and functions are broadened. The Institute should offer systematic instruction related to the needs of young doctors interested in many aspects of medicine as well as in surgery; we think that all the major specialties should be represented in its governing body. There would be great advantages in a close association between the Institute, in its new form, and the proposed teaching complex based on University College (see para. 438(*b*)). The financing of the Institute should reflect the views we have expressed elsewhere (see para. 195) as to the relative parts to be played by university and National Health Service funds in postgraduate medical education; consideration should be given to the appropriateness of a special contribution from the Ministry of Overseas Development in respect of training currently provided by the Institute for overseas students.

THE LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

463. The London School of Hygiene and Tropical Medicine is at present an independent School of the University of London. It has no direct connection with its near neighbour, University College Hospital Medical School, although it is associated with the Hospital for Tropical Diseases, which is administered by the Board of Governors of University College Hospital (see para. 450). The London School of Hygiene and Tropical Medicine clearly has an important part to play in postgraduate training in medical administration. We recommend that it should become part of the new University College—Royal Free teaching group (see para. 438(*b*)).

STAFFING AND TEACHING ORGANISATION IN THE NEW MEDICAL SCHOOLS

464. In the reconstituted medical schools that we propose, teaching will need to be based on a carefully devised programme and where the hospitals involved are not close to one another that programme should as far as possible make movement from one hospital to another unnecessary, save at the beginning or end of a day. We see no insuperable difficulty in arranging teaching programmes in this way on an inter-hospital basis in the groupings we propose. We believe that in devising such programmes the deans of the unified medical schools will need the help of senior associates responsible for the direction of postgraduate education and for other special matters, as indeed we propose generally in paragraph 504. We recommend that in each of the new schools there should be, in each main teaching subject or group of subjects, a chairman of the division or department elected for a defined period and responsible for the detailed arrangements for teaching in the

subject; the chairman should normally be, in our view, a university Professor. Where the present medical schools and postgraduate institutes which will be brought together under our proposals have between them two or more chairs in closely-related subjects, a chairman of the newly-constituted department or division for this subject should be elected or appointed from among the Professors concerned as soon as possible. We hope that ultimately all chairs will be held in the faculty of medicine of the multi-faculty institution of which the medical school will form a part.

465. We propose that each of the teaching groups should as quickly as possible receive a full complement of clinical professorial chairs and units of the type and number expected to be found in the future in all British medical schools. In this connection we endorse the following view, expressed by the Royal Postgraduate Medical School in its contribution to the evidence submitted by the British Postgraduate Medical Federation:

> " The formation of academic clinical units has made a major contribution to the raising of standards of medical investigation and care. In this respect some provincial medical schools make better provision than those in London. Unless such university units can be expanded and can exercise a wider influence in the schools in which they are placed, [London's] leadership in medicine in this country could be in jeopardy."

466. Within the teaching groups, no distinction should be made between chairs which have hitherto been associated with undergraduate medical schools and those hitherto associated with the postgraduate institutes. For example, a Professor at the Institute of Psychiatry might be expected to take part in the teaching of undergraduates in the school of which he is a member even though his research might be wholly concerned with patients in the special hospitals and largely carried out in the Institute. The abolition of the present distinction between those concerned with postgraduate and those largely concerned with undergraduate teaching will be to the advantage of both teachers and students.

467. Clinical teaching in London depends more heavily than elsewhere upon the part-time services of Consultants who serve a relatively small number of weekly sessions at the teaching hospital; we have heard much evidence about the resulting difficulty of arranging programmes of co-ordinated clinical teaching. The part-time teachers sometimes play a more important role in determing academic policy than do the full-time teachers who are appointed by the University of London. As is shown in Appendix 9 (Table 10), there are, on average, more clinical students for each senior university-appointed clinical teacher in London than in other parts of the country. We recommend that the number of such teachers in London be increased until this difference is eliminated. To enable the medical schools to obtain the full benefit of the valuable services provided by part-time teachers, we recommend in paragraph 514 that throughout the country, in all future appointments in major specialties of part-time clinical staff to teaching hospitals, the number of weekly sessions undertaken for the National Health Service at the teaching hospital or hospitals be not less than eight. If this recommendation is accepted the number of part-time teachers should fall, in London as elsewhere, and should be allowed to do so. We recognise that a number of years are likely to elapse before all part-time clinical teachers in

major specialties will be serving a minimum of eight National Health Service sessions a week.

468. We wish to draw particular attention, in the London context, to our general recommendation in paragraph 515 that every teaching hospital group should provide consulting-rooms, within the hospital precinct, for private practice by part-time Consultants on its staff, and that this accommodation be made available to each such Consultant for two or three agreed sessions a week. An agreed fee should be charged for the accommodation and for other hospital services. We hope that in this way the part-time Consultant teachers in London, as elsewhere, will become effectively " geographically whole-time " and will therefore become available for integrated clinical teaching to an extent which hitherto has frequently been impossible.

469. We believe that medical teachers should be actively concerned with the advancement of knowledge by research; and we hope that the amalgamation of the present London medical schools into larger units will free space that will be used to provide better research accommodation for Consultant teachers.

470. Under the arrangements which are proposed in Chapter 5 the traditional " 1st M.B. " examination will disappear. In 1966, as will be seen from Table 10 (p. 179), 134 students began premedical courses in science subjects (chemistry, physics and biology) at medical schools of the University of London. These students constituted about 15% of the total entry to the London medical schools in that year, a percentage three times as great as that in the other medical schools of England and Wales. Even when the " 1st M.B. " examination is abolished there will still remain a small (and probably diminishing) number of students who wish to enter medicine but have had insufficient contact with science in their earlier education. Such students will need courses in basic science subjects before entry to a medical course. Their needs in this respect could almost certainly be met by existing courses in many of the institutions of tertiary education in the London area, or by the science departments of a single designated college of the University of London. The maintenance within medical schools of small isolated departments of basic sciences whose main purpose is to provide preparatory courses for intending medical students is undesirable as well as uneconomic and we recommend that such departments be discontinued. Such a development does not of course preclude the maintenance of separate departments or units, e.g. of medical physics, which make a broad contribution to the clinical work of the medical schools (see para. 312).

471. All the present undergraduate medical schools in London admit to their clinical courses students who have satisfactorily completed preclinical courses in other universities. Oxford and Cambridge alone supply in this way about a quarter of the total clinical entry to London. Under Statutes 132 and 133 of the University of London such clinical students are not at present eligible to proceed to the internal degree of M.B., B.S. of the University of London; they return to Oxford or Cambridge for the final medical examinations of these universities. This arrangement, although hallowed by tradition, makes the use of progressive records of assessment difficult or impossible in the final examination of these students, and the timing of the Oxford and

Cambridge examinations is often such as to interfere with the satisfactory completion of the clinical course in London. In the light of what we have said about examinations in paragraphs 283–285, we think it would be more appropriate if all medical students who take the whole of their clinical education in London were to take the internal medical degree of the University of London.

HOSPITAL ADMINISTRATION IN RELATION TO MEDICAL EDUCATION IN THE LONDON AREA

472. Each of the teaching hospital groups linked with the present twelve undergraduate medical schools and the twelve postgraduate medical institutes, and Hammersmith Hospital linked with the Royal Postgraduate Medical School, has its own board of governors (as also has the Eastman Dental Hospital, associated with the Institute of Dental Surgery); all are situated within the territory of the four Metropolitan regional hospital boards. There are, therefore, in the territory of the four Metropolitan regions thirty separate hospital authorities, each of which has its own finance and direct access to the Minister of Health. Apart from the question whether this system is the best in respect of the treatment of patients we do not consider that in the past it has led either to efficiency or to economy in the provision of clinical facilities for medical education.

473. We have been informed by the Ministry of Health that in recent years the planning of the London undergraduate teaching hospitals, in so far as it relates to the needs of medical education, has been based on principles agreed with the University Grants Committee and the University of London. One of these principles is that students in the postgraduate institutes need access to separate clinical facilities which cannot be shared by undergraduate medical students. We have considered this matter above (paras. 449–450) and have concluded that the separation of postgraduate and undergraduate medical teaching is wrong and should be brought to an end. The second principle is that medical students should as far as possible obtain their clinical training in hospitals close to their medical school. We think the term " close to " might reasonably be interpreted, in modern urban areas, not primarily in terms of geographical distance but in terms of the time needed for a journey, by public and perhaps by private transport. Another of the principles to which the Ministry has referred is that the medical schools should lie within the area served by the University of London: we shall discuss this question later (paras. 483–486).

474. The fourth principle is that an annual intake of a hundred medical students requires for clinical teaching a hospital or a group of hospitals with 1,200—1,500 beds, including those devoted to geriatric assessment and to short-stay psychiatric patients. This number should, in our view, be enough to meet the needs of more than a hundred-student intake, although it would not, of course, meet the needs of a medical school of the size we have recommended in paragraph 436, with the kind of clinical teaching we have recommended in Chapter 4. In paragraphs 373 and 374 we have pointed out that the minimum size of a hospital must often be determined by considerations of medical care rather than of undergraduate or postgraduate education, but

we have suggested that 2,000 beds should be enough for an intake of 200 undergraduates following the kind of course we have in mind.

475. The fifth principle agreed by the Ministry of Health and the University Grants Committee in this connection is that a teaching hospital, being responsible for medical care as well as for medical education, should provide medical services for a local community as well as for a selected group of patients. If a general teaching hospital does not serve a local community its patients are not likely to provide the wide range of cases needed for medical teaching. In theory there is a possibility of providing in inner London the facilities for teaching a greater number of undergraduate clinical students than at present. The population of the areas for which the London teaching hospitals at present accept " ultimate responsibility ", or will do so when present plans are implemented, is expected to be about 2·8 million in 1976; a population of only 2 million would require the 14,000 beds to which access would be needed by the 945 students admitted to clinical education in the London medical schools in 1965. If the annual entry to the clinical period rose, as is implied by our earlier proposals (see para. 436, and also para. 203), there would still be enough beds for teaching purposes. But the changing pattern of the residential population of London must be considered in this connection (see Table 12 below). The varied and accidental factors that led to the foundation of the twelve main London undergraduate teaching hospitals and their associated medical schools could not be expected to have produced a pattern of distribution of hospitals that would be the most appropriate for the

TABLE 12

Population of London and Adjacent Areas in the Nineteenth and Twentieth Centuries

Year	*Population (Thousands)*		
	Former London County Council area	*Greater London Conurbation**	*London and South East Counties†*
1801	959	1,117	1,579
1851	2,363	2,685	3,576
1891	4,228	5,638	7,087
1901	4,536	6,586	...
1911	4,522	7,256	9,100
1921	4,485	7,488	...
1931	4,397	8,216	10,330
1951	3,348	8,348	10,906
1961	3,200	8,183	11,104

* Approximately the present Greater London Council area. The population of the G.L.C. area at the 1961 census was 7,997 thousands and at the 1966 sample census 7,671 thousands.

† Greater London Conurbation and Kent, Surrey, East and West Sussex, part of Essex and part of Hertfordshire.

Source: *Census Reports.*

purposes of modern medical education. Hospitals naturally were founded where the population was concentrated at the time. The enormous growth of the population of Greater London during the past century has created special problems. The centre of London has become more and more a place where business is transacted during the day but where relatively few of the people concerned actually live. The areas served by some of the undergraduate teaching hospitals in London now contain a high proportion of day-time visitors, and the resident population of these areas is not typical of the population in general. The central teaching hospitals, in order to supplement the resources directly available to them, have sought the transfer of some nearby service hospitals from the regional boards to the teaching groups, and have also sought association with peripheral hospitals.

476. In the future additional hospitals will doubtless be needed to serve the expanded peripheral population of London, and access to this population for teaching purposes must be provided. But already the transfer of hospitals hitherto controlled by the regional boards to the boards of governors of teaching hospitals has resulted in a situation where the hospital services of large areas of London, and particularly those in central London, are almost completely provided by teaching hospitals. Because of this, the Metropolitan regional hospital boards are finding growing difficulty in carrying out their statutory functions of planning the hospital and specialist medical services in the areas for which they are responsible. Such difficulties have called for much more co-ordination of the responsibilities of different authorities in the planning of hospital services than had previously seemed to be needed.

477. In 1965 the Minister of Health decided that any further proposals for the transfer of regional board hospitals to teaching hospital groups should be critically considered on their merits, and should be approved only where such a transfer was clearly in the interests of the hospital services in the area and in conformity with the duties of boards of governors of teaching hospitals to provide facilities for clinical teaching. Accordingly in July 1965 the Minister arranged to set up for each of the four Metropolitan hospital regions a joint consultative committee. Each committee had the duty of advising the regional hospital board, and the boards of governors of the teaching hospitals in the area concerned, about the planning of hospital and specialist services in that part of the region which lay in central London. Each of the joint consultative committees was made up of representatives of the regional board, the boards of governors of the undergraduate teaching hospitals in the region, the University of London, the London Boroughs' Committee, and the Inner London National Health Service Executive Council. Subsequently arrangements were made for representing on each joint consultative committee the special hospitals associated with the postgraduate institutes in the area concerned.

478. In setting up these committees the Minister said that he did not wish to make a decision in the immediate future about the final form of the administration of the hospital and specialist services in London. He said that these services would be related to the future role of the London teaching hospitals, and that this in turn would depend upon our recommendations. The fluidity of the situation revealed by this statement has been of some significance to

us in considering the problems of the organisation of medical education in London.

479. In paragraph 500 we recommend changes in the present arrangements for the administration of university teaching hospitals throughout the country; we think that making these hospitals an integral part of the regional hospital service for major planning purposes will bring important advantages to medical education, in particular flexibility of budgets, access to a wider range of hospitals and patients, and coherent planning of postgraduate as well as undergraduate education. The educational advantages of the new arrangements will, in our view, be at least as strong in London as elsewhere, and we recommend specifically that the government of teaching hospitals in the four Metropolitan regions be reorganised on the basis proposed in paragraph 500. We do not consider, however, that the present North-East and North-West Metropolitan Hospital Regions are suitable units for educational purposes: they are far too complex, and contain too many teaching hospitals. We recommend therefore that these two regions be reorganised into three new regions, the boundaries being drawn so as to follow local authority boundaries wherever possible and to divide as equally as possible the population of the area. The new North-East Metropolitan Region would contain the St. Bartholomew's-London teaching group, the new North-West Metropolitan Region would contain the Middlesex-St. Mary's group and the Hammersmith Hospital group, and the new region covering the north central Metropolitan area would contain the University College-Royal Free group. The South-West Metropolitan Region would contain the Westminster-Charing Cross and the St. Thomas's-St. George's groups, and the South-East Metropolitan Region the Guy's-King's College group.

480. In accordance with our recommendations in paragraph 500 the regional boards of the future five Metropolitan regions should include, in addition to members representing the other interests at present found in regional boards, strong representation from the university interests concerned. Under the new regional boards immediate responsibility for the management of most district hospitals or groups of such hospitals would continue to be vested in group management committees as at present. In each region all the district hospitals within a reasonably manageable range of the main teaching hospitals would be administered, under the regional board, by the same governing bodies as the university teaching hospitals (with separate executive committees in each of the major hospitals); about one-half of the governors should represent university interests and should of course include the deans of medical schools and representatives of the multi-faculty institutions with which they are associated (see Appendix 16).

481. We think that the arrangement we propose would provide excellent facilities for the organisation of medical education, both undergraduate and postgraduate, in each region in such a way that both university and district hospitals could be used to the best advantage, and would in addition simplify administration and make possible a unified service for patient care in each region. Under this arrangement convenient links could be made in each region with local authority health and welfare services, which would enable these to play their proper part in medical education.

482. We envisage in the future a much less sharp distinction than now exists between teaching hospitals and district hospitals. Close contacts would grow up between the peripheral district hospitals and the university hospitals in each region, and the district hospitals would have greater opportunity of contributing substantially to medical education, and especially to that of postgraduate students.

TERRITORIAL RESPONSIBILITIES OF THE UNIVERSITY OF LONDON

483. Acceptance of the recommendations set out above might substantially extend the areas under the aegis of the University of London with respect to medical education, and some alteration in the Statutes of the University would be needed for this purpose.

484. The area within which institutions may be admitted to membership of the University of London is described in Statutes 111 (1) and 111 (3) of the University:

> *University of London Statute* 111 (1)
> The Senate may from time to time admit, either temporarily or permanently, as a School any public educational institution providing instruction of a university standard and situate within the Administrative County of London, including the county of the City of London, which the Senate may deem suitable for the status of a School.

> *University of London Statute* 111 (3)
> The Senate may admit as a School any public educational institution situate outside the area laid down in this Statute which is wholly or mainly devoted to the pursuit of some branch of University study which cannot, in the opinion of the Senate, be adequately pursued in any School within that area.

485. Under the London Government Act of 1963 the " Administrative County of London " ceased to exist; but we are given to understand that by virtue of Section 4 (4) of that Act the geographical limitation set out in the Statutes of the University of London remains unchanged. Although we understand that Bedford College is permitted by its charter and statutes to establish itself in " the county of Middlesex ", the conclusion must be drawn that, apart from any decision of the Senate of the University of London taken under the University's Statute 111 (3), no School of the University can now be established beyond the bounds of the former area covered by the London County Council. Three of the Schools of the University are and always have been outside this area: Royal Holloway College at Englefield Green, Surrey; Wye College, near Ashford, Kent (a school of agriculture and horticulture) and Richmond College, Richmond, Surrey (a Methodist theological college). All three of these institutions became Schools of the University in 1900, when the geographical limitation was first promulgated. The University has apparently not exercised the discretion with which it was endowed in 1929 under its Statute 111 (3).

486. We have been told that a proposal to rebuild a London medical school at Northwick Park, Middlesex, where the new Clinical Research Institute of the Medical Research Council is being built, was declared to be unacceptable because of the limitations imposed by the Statutes of the

TABLE 13

Catchment Areas of the London Teaching Hospitals, 1964
(Compiled from a 10% sample of in-patient discharges and deaths)

Teaching Hospital Group	*Area of Residence of Patients in Sample*						
	*Inner London**		*Outer London†*		*Outside London‡*		*All Areas*
	No.	%	No.	%	No.	%	
Undergraduate							
The Royal Hospital of St. Bartholomew	749	*48·4*	396	*25·6*	403	*26·0*	1,548
The London Hospital	712	*39·4*	879	*48·7*	215	*11·9*	1,806
The Royal Free Hospital	1,064	*71·7*	277	*18·7*	142	*9·6*	1,483
University College Hospital	935	*56·2*	407	*24·4*	323	*19·4*	1,665
The Middlesex Hospital	501	*40·3*	501	*40·3*	240	*19·3*	1,242
Charing Cross Hospital	942	*57·9*	553	*34·0*	131	*8·1*	1,626
St. George's Hospital	660	*58·6*	309	*27·4*	158	*14·0*	1,127
Westminster Hospital	1,106	*55·5*	428	*21·5*	459	*23·0*	1,993
St. Mary's Hospital	1,107	*63·2*	491	*28·0*	153	*8·7*	1,751
Guy's Hospital	1,044	*59·8*	356	*20·4*	346	*19·8*	1,746
King's College Hospital	1,922	*85·8*	199	*8·9*	118	*5·2*	2,239
St. Thomas's Hospital	1,351	*73·2*	191	*10·3*	304	*16·5*	1,846
Total	12,093	*60·3*	4,987	*24·8*	2,992	*14·9*	20,072
Postgraduate§							
The Hammersmith and St. Mark's Hospitals	966	*64·1*	359	*23·8*	181	*12·0*	1,506
The Hospital for Sick Children	227	*29·0*	294	*37·6*	261	*33·4*	782
The National Hospitals for Nervous Diseases	106	*27·7*	129	*33·7*	148	*38·6*	383
The Royal National Throat, Nose and Ear Hospital	197	*39·4*	244	*48·8*	59	*11·8*	500
Moorfields Eye Hospital	212	*32·6*	273	*41·9*	166	*25·5*	651
St. John's Hospital for Diseases of the Skin	24	*30·4*	43	*54·4*	12	*15·2*	79
The Hospitals for Diseases of the Chest	289	*53·9*	138	*25·7*	109	*20·3*	536
The Royal National Orthopaedic Hospital	69	*19·3*	162	*45·3*	127	*35·4*	358
The National Heart Hospital	35	*35·0*	36	*36·0*	29	*29·0*	100
St. Peter's, St. Paul's and St. Philip's Hospitals	127	*34·1*	130	*34·9*	115	*30·9*	372
The Royal Marsden Hospital	111	*36·6*	109	*36·0*	83	*27·4*	303
Queen Charlotte's and Chelsea Hospitals	355	*48·2*	329	*44·7*	52	*7·1*	736
Total	2,718	*43·1*	2,246	*35·6*	1,342	*21·3*	6,306

* The Inner London area covers the following London boroughs: City of London, Westminster, Lambeth, Southwark, Islington, Camden, Wandsworth, Lewisham, Greenwich, Hammersmith, Tower Hamlets, Kensington and Chelsea, and Hackney.

† The outer London area comprises the remainder of the Greater London Council area.

‡ Includes patients resident outside England and Wales and those whose area of residence was not known.

§ The Bethlem and Maudsley Hospitals group was not included in the study.

Source: *Ministry of Health and General Register Office.*

University of London. Whatever may have been the advantages of establishing the Clinical Research Institute in such a location, we regret its separation from any major centre of medical education. We think that the University of London should not remain restricted by its Statutes from allowing its territorial responsibilities for medical education to widen, particularly in view of the outward movement of the residential population that is needed for adequate clinical teaching. Table 13 (p. 200) shows that already a significant proportion of the in-patients treated in London teaching hospitals come from outside the inner London area; the full extent of this tendency is concealed because many patients coming from other areas use addresses in central London for convenience during their treatment. We suggest that any future limitations should take account not only of geographical distance but also of the facilities and convenience of methods of transport.

IMPLEMENTATION OF THE PROPOSALS

487. The completion of the scheme we have proposed for the reorganisation of medical education in London will take a long time. But a number of its features can be realised in the short term and steps should be taken forthwith to begin its implementation. Our proposals will be not realisable, however, unless money is provided for this purpose, in addition to that required for normal rebuilding and expansion (see Chapter 7).

488. We recommend that general responsibility for the implementation of all aspects of the complete plan for London should be placed in the hands of a Committee for Medical Education in London which should be appointed by the Secretary of State for Education and Science in consultation with the Minister of Health. The Committee should include representatives of the University of London, the University Grants Committee and the hospital authorities; it should also include independent members, one of whom should be chairman. The Committee should remain in being long enough to ensure that, in future developments, short-term convenience is not allowed to nullify long-term planning.

CHAPTER 10

ORGANISATION AND ADMINISTRATION OF MEDICAL SCHOOLS AND TEACHING HOSPITALS

THE GOVERNMENT AND ORGANISATION OF TEACHING HOSPITALS

489. Until the introduction of the National Health Service almost all undergraduate clinical instruction in this country was given in voluntary hospitals supported by charity and controlled by governing bodies representing their main benefactors; for instruction in certain specialties (such as psychiatry) which were not strongly represented in the main teaching hospitals, some use was made of institutions under municipal control.

490. The National Health Service Acts, which came into effect in 1948, established different forms of government for teaching hospitals in England and Wales and in Scotland. Each group of such hospitals in England and Wales was placed under the control of a board of governors appointed by the Minister of Health and with up to one-fifth of its members nominated by the university concerned; these boards were made responsible directly to the Minister and had no statutory connection with the regional hospital boards, which were made responsible for all the other hospitals taken over under the Act, although the boundaries of the regions had been drawn so that—as recommended by the Goodenough Committee*—the influence of the university could extend through the region. The Scottish teaching hospitals on the other hand were transferred, with their non-teaching counterparts, to the control of the regional hospital boards, in the appointment of which, as of the English regional boards, the universities concerned had no part except a general right to be consulted. The Scottish universities were, however, given the power to nominate up to one-fifth of the members of the boards of management set up by the regional boards for the management of individual hospitals or groups, when these were used for clinical teaching. Moreover, each Scottish regional board was equipped with an advisory medical education committee, constituted by the Secretary of State, of which at least one-third of the members were to be appointed by the university concerned.

491. The special arrangements for the independent governing of teaching hospitals in England and Wales have sometimes been attributed to a persuasion that in the political circumstances of the time this was the most appropriate way of dealing with the substantial endowments held by many of them, particularly in London (see para. 416). The justification most generally put forward in public discussion, however, has been the desirability of ensuring that the medical schools should have a strong influence in the policy and activities of the hospitals on which they depended primarily for their teaching facilities. There was also a wish to ensure that the advancement of

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* Report of the Interdepartmental Committee on Medical Schools, p. 74. H.M.S.O., 1944.

medicine, in which these hospitals had traditionally played a leading part, should not be subordinated to the provision of routine hospital services. There were great differences in standards of staff and equipment between teaching and other hospitals. The need for improving hospital services throughout the country was so great and obvious that many people thought a single authority would probably be unable to allocate enough of its limited resources to the teaching hospital to maintain educational standards without leaving other hospitals unacceptably short of money. There were additional arguments for the independence of the teaching hospitals in London: they were big by the standards of the time, they had come to be regarded as serving the whole country rather than their local district, and they were not at that time needed to provide routine hospital services for the London area.

492. An authoritative public review of the present arrangements was carried out by the Guillebaud Committee in 1956. The Committee considered a number of financial and administrative arguments for making the regional hospital boards responsible for the teaching hospitals in England and Wales, and counter-arguments based largely on the educational and related reasons advanced for separating the two kinds of authority in the first place. The conclusion of the majority of the Committee* was that a convincing case had not been made out for the suggested change; this conclusion was supported, at least in respect of the London teaching hospitals, by an independent study carried out by the Acton Society Trust.†

493. In recent years the working of the system has come under review by a number of organisations concerned with the extension and improvement of medical education. The University of Nottingham's Medical School Advisory Committee concluded‡ that neither the English nor the Scottish pattern was entirely satisfactory, and suggested that the proposed new teaching hospital at Nottingham should be governed by a body constituted jointly by the Sheffield Regional Hospital Board and the University of Nottingham, as equal partners; this body would be financed by the Ministry of Health and the University Grants Committee. The University and the Board were unable to find a practicable form of organisation in these terms, however, and have agreed§ that the governing of the new teaching hospital group shall be, at least for the time being, a responsibility formally of the Regional Board (the membership of which will be modified to include appropriate University representation). Decisions will normally be taken by a committee representing the University, the Regional Board and the chief officers of the hospitals; this committee will take part with the Board in discussing the Board's financial requirements with the Ministry of Health and will be responsible for examining any proposed action requiring an extension or alteration of facilities, or affecting service needs. Although the administration of a major teaching hospital at Nottingham will put severe strains on the Sheffield Regional Hospital Board—as presumably would be the case in any large

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* Report of the Committee of Enquiry into the Cost of the National Health Service, Cmd. 9663. H.M.S.O., 1956.

† Hospitals and the State: Hospital Organisation and Administration under the National Health Service—4. Groups, Regions and Committees, Part II: Regional Hospital Boards. Acton Society Trust, 1957.

‡ Report of the Medical School Advisory Committee. University of Nottingham, 1965.

§ Report on the Form of Government for the Teaching Hospital at Nottingham. Sheffield Regional Hospital Board, 1967.

region where the teaching hospital was some distance from the main centre of administration and population—the Board is willing to try it out, and the University prefers the agreed arrangements to the institution of a separate board of governors.

494. We understand that a solution similar to that found at Nottingham may well be adopted by the University of Southampton and the Wessex Regional Hospital Board, who have told us that in their view the teaching hospitals associated with the new medical school at Southampton could best be governed under arrangements of the Scottish type, provided the University were adequately represented on the Regional Board as well as on the body immediately responsible for administering the teaching hospitals.

495. The arguments for the present system of administration of teaching hospitals in England and Wales, whatever their validity may have been twenty years ago, have been eroded greatly by experience and changes since that time. The boards of governors of teaching hospitals have not always represented university opinion and experience as adequately, or been as responsive to the needs of their associated medical schools, as was the intention. Despite the gradual insulation of many teaching hospitals from the pressure of local district service (offered as an advantage in 1948 though not, presumably, a claim which their founders would have wished to put forward) at least some have been reluctant to depart from the traditional relationship with the medical schools implied by the fact that they were founded primarily as hospitals and only secondarily took on a teaching function. They have tended to be heavily influenced in their policy by the interests of their existing Consultant staff. Given the very limited financial growth rate that has been approved by successive governments, any new development tends to be a threat to some existing interest. As a result the medical policy of some teaching hospitals has tended to be rigid and unenterprising: important new departures, such as the establishment of large units for the practice of new specialties, have taken place elsewhere. Because of the increasing scale of expenditure required, a teaching hospital board of governors usually has more difficulty than a regional hospital board in finding from its own resources the money needed to meet new calls for special developments: an unforeseeable urgent request for £10,000 would be a minor matter for a large regional board, but could cause considerable embarrassment to a board of governors whose relatively small budget leaves little room for manoeuvre.

496. Boards of governors usually have no effective mechanism for forward planning to take advantage of staff retirements or for re-deploying resources on any but the most insignificant scale. The buildings and equipment of many large district hospitals have reached and in many cases surpassed the standards of the teaching hospitals. A district service function has come to be seen as an important requirement in a hospital from the point of view of medical education. The whole character and distribution of the hospital service, and the needs of medical education, have changed to such an extent that the requirements of a modern medical school cannot be met by a hospital group which lacks, on the one hand, access to a substantial regular supply of " ordinary " cases which only a responsibility for routine hospital service can ensure, and, on the other hand, a full range of specialised staff and equipment

which cannot economically be provided independently of the needs and facilities of the ordinary hospital service. In recent years many of the teaching hospitals which had ceased to provide a full hospital service in their immediate areas have accepted such responsibilities again. Associations have grown up in many places between teaching and district hospitals in order to widen the range of patients accessible to students, and a number of hospitals have been transferred from the charge of regional boards to that of boards of governors by designation as teaching hospitals under the National Health Service Act, but naturally there are limits to the extent to which this can be done without seriously impairing the ability of the regional boards to maintain a properly organised and comprehensive service. In at least some centres, medical schools have to maintain a difficult, delicate and cumbersome relationship with two hospital authorities in the same area in order to meet their needs.

497. The Scottish arrangements have avoided many of these problems by providing from the outset a community of interest between teaching and routine hospital service that has not been easy to achieve in England and Wales. The Scottish medical school has the administrative means of immediate access to all the hospital facilities of its region, and has been able to draw upon them with much more flexibility than its English counterpart: although the main teaching hospitals are recognised as such, teaching facilities are being extended as required, in the bigger Scottish regions, by the development of departments within other hospitals rather than by classification of the latter as teaching hospitals. Many of the advantages claimed for the Scottish system are, however, found particularly in those Scottish hospital regions which are small in area and whose population is concentrated near the medical school. Except in the Western Region, the hospitals in and around the university town have always been sufficient to cover the teaching and most of the service requirements for the region, so that the harmonisation of the two has been enforced as well as facilitated. The generally good relationship between the Scottish universities and regional boards seems to be due in considerable measure to the friendliness of informal personal contacts between the individuals concerned. The universities' right of consultation on the appointment of board members has not led to the appointment of members recognised as university representatives, and neither side has had the advantage of having a co-ordinated and authoritative exposition of university policy available through the formal machinery of the board. The statutory medical education committees, which were intended to provide a meeting-point for the views of the universities and the regional boards, have not functioned as effectively as had been hoped, and new medical research and training committees have been set up by some regional boards and universities. The only other formal means of contact between the two parties—except in the day-to-day responsibilities of the boards of management of the main teaching hospitals—is through the Secretary of State. In practice many matters of common concern seem to be settled on an informal basis directly between the officials concerned, but sometimes there have been undue delays and there has not always been adequate communication at the highest level on important policy decisions and their implementation.

498. We have heard no serious suggestion that medical education in Britain requires a pattern of teaching hospital government radically different from

anything at present in operation in Britain. In particular, there seems to be no feeling that universities should themselves control and operate the teaching hospitals, as in some other countries; in fact, the circumstances and trends of the time would make this quite inappropriate. The main questions are:

(*a*) whether the two systems working in Scotland and in England and Wales respectively should continue as at present (subject to what we recommend in paragraph 479 specifically for the Metropolitan area) for hospitals associated with existing medical schools; and if so,

(*b*) whether we should endorse the proposals made for arrangements of a new kind at Nottingham and Southampton and recommend such arrangements for other new medical schools, and so bring into operation yet another system; or

(*c*) whether the present arrangements should be revised and rationalised throughout Great Britain; and if so, on what basis.

499. There are difficulties in the working of the present Scottish arrangements, but they do not seem to be insuperable. On the other hand, the English arrangements vary in effectiveness and in some places have given rise to a number of problems which are bound to become worse if present trends in the aims and organisation of medical education continue. Neither system is satisfactory; new arrangements are required if the development of medical education is not to be seriously impeded.

500. In our view the teaching hospitals in England and Wales should be brought within the framework of administration of the regional hospital service generally and the constitution of the regional hospital boards throughout Great Britain should be modified in order to provide on them appropriate representation of the universities which are concerned with medical teaching. Regional hospital boards should include members nominated by the universities in their areas which have faculties of medicine, and these universities should be consulted when the chairman of the regional board is to be appointed. We think that normally the university representatives should form about one-fifth of the total; in London they should be drawn largely or entirely from the medical schools and the multi-faculty institutions with which the schools will, we hope, become associated and in due course integrated (see Chapter 9). We recommend that the present system of boards of governors of teaching hospitals in England and Wales be discontinued. We recommend that throughout England and Wales under the general responsibility—both medical and financial—of the regional boards the main hospitals associated with each medical school, and preferably any other hospitals in the immediate area of the medical school, should be grouped under a single newly-constituted governing body with a small number of members, about one-half of whom should be nominated by the university concerned; we think that hospitals in such groups should be known as university hospitals. The same arrangements should be made in Scotland. A dental teaching hospital which at present is part of a teaching hospital group would presumably form part of the new university hospital group under the regional board. An executive committee would probably be needed in each major university hospital to deal with routine managerial business, so that the members of the governing body were free to concentrate on matters of policy.

The new arrangements must provide adequate financial and administrative safeguards for the maintenance and development of teaching and research. In Appendix 16 we outline a model organisational structure which exemplifies the principles we have in mind. Endowments at present vested in boards of governors should be under the effective control of the new governing bodies responsible for the hospitals concerned: such funds are a valuable source of flexible support for research and other activities closely associated with teaching, and should not be diverted to general purposes.

501. If in connection with future changes in local government organisation the present hospital regions should be replaced by other organisational units there should be no major difficulty in adapting our proposals accordingly. The essential principle is that each group of teaching hospitals should be under the immediate charge of a governing body with a very strong university element and should be an integral part of a wider structure with appropriate university representation in the main authorities. Apart from any general review of regional hospital organisation, we think there may be a need to consider a division of some of the larger regions, for example the Sheffield Region, in order to enable the main authorities to deal more effectively with the complexities arising from the establishment of new major teaching centres within their areas (see Chapter 7).

INTERNAL ORGANISATION OF MEDICAL SCHOOLS

502. We have recommended, in earlier chapters, expansion and changes in medical schools. Evidence submitted to us, and our own observations,* show that already most medical schools are finding difficulty in dealing efficiently with the administrative side of their work. Many have expanded their student intake and their staff numbers considerably in recent years; most are working in inadequate buildings; but there are many serious defects of organisation which cause frustration and waste of time, effort and money, and which are bound to grow as medical schools become bigger and more complex, unless the administrative structure of the schools is improved.

503. The dean of a modern medical school has heavy and time-consuming responsibilities. In addition to supervising the internal administration of the faculty of medicine, he must represent the faculty within the university, and the university, as a medical teaching institution, to the world outside. He must keep in close personal touch with the staff and students as well as with developments in education and in medicine. As medical schools increase in size and complexity, as we think they must (see Chapter 7), their demands on their deans will become even more severe. Questions such as whether the dean's appointment should be full-time or part-time, permanent or temporary, have been widely debated. The answers to such questions must often depend on the circumstances and the individuals concerned. Whatever arrangements may be found best in each university, the dean must be supported by a strong and efficient administrative organisation.

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* A great deal of the factual material available to us in this context has come from a survey undertaken for us by Mr. George Clark, Secretary of the Middlesex Hospital Medical School and formerly Registrar of the University of Sheffield, who visited every undergraduate medical school in Great Britain and prepared a most valuable review of their present administrative arrangements.

504. The dean must of course be ultimately responsible for the conduct of all the school's affairs, but the experience of some medical schools has shown that many duties can to a large extent be successfully delegated in suitable circumstances: such duties include curriculum arrangements, admissions, discipline, finance and perhaps junior staff appointments. Functions relating to postgraduate activities should in particular be delegated in large measure to an officer who can take a major part in organising the work of the regional postgraduate committee and arranging career guidance for trainees (see Chapter 3). If administrative work of this kind is to be done effectively adequate arrangements must be made for remuneration. Too often medical schools have had to rely hitherto on Professors or Consultants to spare time and effort from their other activities without specific remuneration, or have been forced to take advantage of the availability of recently retired Consultants who could not be expected to devote more than a few years to this work.

505. Every effort should be made to encourage all members of the staff of medical schools to play a part in the machinery of government of their school. The structure of boards and committees in each school should be reviewed with this object in mind. The more widely the responsibilities are shared the greater need there will be for a capable administrative staff to ensure continuity and co-ordination, to provide advice based on experience and to see that the agreed policies of the school are efficiently administered. The limited administrative staffing of most medical schools—supplemented though it is, outside London, by the resources of the university's central administrative offices—has had difficulty even in dealing with the demands for routine statistical information increasingly made by government and other bodies in recent years. To provide adequately for the needs of the future we think every faculty of medicine should have the services of a capable lay administrator at senior level, and enough supporting staff to deal efficiently with the work of the school.

506. Delegation of many tasks, and the availability of an adequate administrative staff, will help deans to keep in touch with both students and teachers, but many medical schools have already reached a size which rules out any possibility of effective personal contacts between deans or heads of departments and every student. Further expansion will increase the problems which are bound to arise from the increasingly varied social and scholastic background of medical students, and from the greater freedom of personal choice that we hope will be available in the undergraduate curriculum (see Chapter 4). Systematic arrangements will be required to give every student guidance and help in understanding the process and purpose of the course and making the many personal decisions required of him. A number of medical schools already operate tutorial systems, usually based on the allocation of small groups of students to selected members of the staff who undertake to give informal advice on any personal matter troubling the student. The success of these arrangements seems to vary with the willingness and ability of the tutor to achieve a real measure of informal communication with his student group. The dean of every medical school should appoint a senior member of the staff to organise the tutorial arrangements and to discuss with tutors the objectives of the system and the best way of reaching them. We suggest in paragraph 557 special additional arrangements for helping students from overseas.

THE STAFFING OF MEDICAL SCHOOLS AND TEACHING HOSPITALS

507. In the paragraphs that follow we are concerned mainly with matters which affect clinical teachers in undergraduate medical schools. We referred in paragraph 372 to difficulties of organisation that will affect the implementation of our recommendations for undergraduate medical education. The problems are wider than this, however, and deeper: they would demand our attention even if we were content with the educational system on its present lines; they show themselves in a particularly acute form in London but can be found in almost any medical teaching centre in the country.

THE RESPONSIBILITIES OF FULL-TIME AND PART-TIME TEACHERS

508. The central problem is the relationship between the two kinds of clinical teacher found in British medical schools. One group have made education and research their primary interest and have taken full-time teaching appointments on the staffs of universities, although they of course devote a substantial part of their time to their interest in the care of patients and so keep abreast of their profession and have access to the cases needed as a basis for teaching; usually they hold honorary contracts with the board of governors of the teaching hospital associated with their medical school. The other group are primarily in professional practice, usually holding paid contracts at the teaching hospital for specified numbers of weekly sessions during which they provide instruction to students, but often spending a good deal (sometimes most) of their time in other hospitals or in private practice. The great variety of titles and terms of appointment prevents a precise definition of the two groups in terms of numbers, but there are in Britain at present about 420 wholetime university clinical teachers (Senior Lecturers and above) and about 1,600 National Health Service Consultants engaged to some extent in university undergraduate clinical teaching (see Appendix 9, Table 9). For convenience we shall refer to these two groups as full-time and part-time teachers respectively, though both spend part of their time in teaching and research and part in caring for patients.

509. [illegible] members of each group have had a stereotyped picture of the other. There are still full-time teachers who see the part-timer as a prosperous, busy practitioner who owes his success to clinical acumen rather than painstaking investigation, whose teaching is based on personal dogma rather than scientific fact and whose interests require the whims of private patients to take priority over the needs of his students. There are still part-time teachers who see the full-timer as a desiccated preacher, more interested in the advancement of medicine than in the welfare of his patients and unable to offer his students any guidance as to the realities of life outside the ivory tower of his own well-equipped and over-staffed unit.

510. There is probably enough truth in each of these fanciful pictures to prevent its being patently ludicrous. Medical education in this country has demanded the employment of both full-time and part-time teachers because each has something to offer that the other lacks, and because each has

limitations inherent in the pattern of work he has chosen. The proportion of part-time teachers is greater in medical than in other faculties. Such teachers include many clinicians of great distinction who have made a most valuable contribution to medical education; they must continue to take a prominent part in the teaching of every medical school. We think, however, that the burdens and responsibilities of administration in the school should be distributed in proportion to the amount of time that members of staff are committed to devoting to the work of the school. Those who can give only a small part of their time to medical education should not expect, or be expected, to have the same voice in the school's affairs as those whose main interests lie in this field. We hope therefore that all medical faculties will adopt in their machinery of academic government a system of representation which will relate responsibility to contribution.

PAY AND PROSPECTS OF UNIVERSITY MEDICAL TEACHERS

511. If our recommendations in earlier chapters are to be implemented, the problems of remunerating appropriately the university-employed full-time clinical teacher, who stands in this respect between the academic and professional worlds, will become more prominent. These problems have existed for a long time. We cannot envisage any solution which does not take account of the basic fact that the National Health Service offers higher rewards to doctors than do the universities. We think university medical teachers ought not to be worse off than doctors of comparable ability and responsibility in National Health Service appointments. Moreover, teachers and research workers in the preclinical sciences have in our view a valuable contribution to make to hospital services; we see no reason why hospital authorities should not make widespread use of them as advisers, consultants (in the non-medical sense) and supervisors of laboratory services. To the extent that such work went beyond the normal university duties of the individuals concerned, the hospital authorities ought to pay them for it.

512. Honorary hospital contracts are generally recognised to be necessary in order to enable university clinical teachers to carry out their duties adequately and to ensure that their clinical experience will be adequately recognised, especially if they should wish to move to paid hospital posts. In some places, particularly in Scotland, administrative considerations in the hospital service have led to a restriction of the number of honorary Consultant contracts available to university staff, with the result that some Senior Lecturers in clinical departments have honorary contracts as Senior Registrars or without specified hospital status; consequently, Lecturers whose ability and experience is comparable with that of Senior Registrars are sometimes given honorary contracts with only Registrar status. We see no reason why the number of honorary Consultant contracts available to Senior Lecturers need be restricted, provided that two conditions are satisfied. First, the suitability of a Senior Lecturer for honorary Consultant status should be assessed by an appointment committee of the teaching hospital authority, similar in composition to that which would consider applications for a paid Consultant appointment in the National Health Service. Secondly, universities should maintain a reasonable balance between the number of Lecturer and Senior Lecturer posts, and should keep the hospital authorities informed

of the number of clinical Lecturers employed who may become candidates for honorary or paid Consultant appointments.

THE EMPLOYMENT OF PART-TIME CONSULTANT TEACHERS

513. Many Consultant teachers in England and Wales spend a considerable part of their time in work outside the undergraduate teaching hospital group. The proportion of part-time Consultant teachers serving five or less half-day sessions weekly in such hospital groups is 55% in London, 43% in the rest of England and Wales and 8% in Scotland (see Appendix 9, Table 11). Before the National Health Service came into being, a Consultant in one of the major specialties normally derived his income largely from private practice (opportunities for which have always been more plentiful and lucrative in London than elsewhere) and could not be expected to give a big share of his time to the teaching hospitals, which depended on voluntary effort and offered only honorary appointments to most of their senior medical staff. This tradition has survived, particularly in London, where most Consultants engaged in undergraduate teaching still have contracts for only five or fewer sessions a week at the teaching hospital. Those who do not want to spend the rest of their time in private practice must look for appointments at other hospitals. Of the part-time Consultants engaged in undergraduate clinical teaching, 19% in London, compared with 2% elsewhere in England and Wales and 9% in Scotland, serve three or more separate National Health Service hospital authorities (see Appendix 9, Table 12). They may well wish to undertake research, but seldom are the facilities of the teaching hospitals and medical schools sufficient for part-time as well as full-time staff. Thus a great many Consultant teachers are by inclination or force of circumstances absent from the teaching scene for a good deal of their time, and are often not available at the times when others could take part in a programme of combined teaching. We have received evidence about the resulting difficulties that arise, especially in London, in planning co-ordinated clinical instruction in the medical schools. Some witnesses have suggested that the division of a Consultant teacher's time between a number of separate appointments enables him to bring a helpful variety of experience to his teaching. We think that if there is any real educational benefit to be gained from multiple appointments it is due only to the inability of many teaching hospitals to provide a reasonably wide range of cases, and we hope that this defect will be remedied by the changes we have proposed in paragraph 500.

514. The teaching hospitals owe their privileged position with regard to staffing and equipment to their educational functions. Educational needs should not be undervalued, however ancient the tradition of medical service in any hospital; we think that university hospital authorities throughout the country, and particularly in London, should appreciate the disadvantages suffered by medical education as a result of the traditional staffing system. We think that Consultant teachers should normally be expected to hold National Health Service contracts for not less than eight weekly sessions in the university hospital group, and we hope that if proper facilities for research are provided the number of full-time (eleven sessions) clinical appointments in university hospitals will be substantially increased, particularly in London. In some specialties the number of sessions served in a particular hospital or

group might be less than eight, but in general we recommend that the university hospital appointment should cover eight sessions or more unless there are strong reasons to the contrary. The total number of sessions covered by the hospital contract should include those which, with the agreement of the university, are specifically added for university teaching and the advancement of knowledge by research. In our view, the number of these additional sessions should be specified in the Consultant teacher's contract (as is already done by the Scottish South-Eastern Regional Hospital Board), and the Consultant's teaching and research obligations should be firmly laid down in general terms.

515. A number of Consultant teachers will probably wish to continue some private practice. The problems which this raises, both in ensuring that such teachers are available where and when they are needed for teaching and that they have access to the facilities needed to treat private patients at an acceptable modern standard, have given rise to proposals that Consultant teachers' service should be "geographically full-time," i.e. that they should be enabled to see and treat private patients at the teaching hospital. In this way the waste of time and effort involved in travelling to and from private consulting rooms and clinics elsewhere, and the need to maintain a separate office staff and to arrange for independent laboratory investigations, can be avoided. We think that facilities for " geographically full-time " service on these lines would offer great advantages to medical education. We understand that some hospitals have already acquired houses or other accommodation nearby which is rented to Consultants for private practice; we think that all university hospital authorities should do their best to provide accommodation suitable for this purpose and should expect that any private practice by their medical staff would be undertaken there, with provision for the use of hospital laboratory, secretarial and other services on appropriate terms. If this is done, universities will perhaps more readily give senior academic status to part-time Consultant teachers.

ORGANISATION OF CLINICAL TEACHING

516. In discussing the lines on which we should like to see undergraduate medical education develop we drew attention to some problems which have arisen from lack of collaboration among clinical teachers (see para. 227). Medical care in British hospitals is usually organised on the basis that each group of beds is allocated to an individual Consultant (sometimes a member of university staff with an honorary Consultant appointment) who, with the help of the junior doctors comprising his " firm " or unit, has complete responsibility for the clinical management of patients in these beds. Working parties set up by the Health Departments* have recently drawn attention to some of the disadvantages of this tradition in so far as patient care and general hospital organisation are concerned. The system has most unfortunate implications for undergraduate clinical instruction, a substantial part of which is given through the attachment of small groups of students to a series of firms in different specialties. The instruction given in a single major

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* Report of the Joint Working Party on the Organisation of Medical work in Hospitals. H.M.S.O., 1967.

Report of the Joint Working Party on the Organisation of Medical Work in the Hospital Service in Scotland. H.M.S.O., 1967.

specialty may be shared between a dozen teachers, each with complete autonomy in his teaching as well as in the treatment of his patients; the Professor, though nominally responsible for coordinating teaching in his subject, does not always have the authority to discharge this responsibility effectively. Students are left to reconcile for themselves (with, of course, the help they get from formal instruction in the academic departments of the medical school) the clinical information and experience acquired in their various attachments. The means of co-ordinating teaching within a specialty, let alone between one specialty and another, are hard to discover in these circumstances. Rather than embracing the full potentiality of the clinical attachment, such co-ordination and integration as can be achieved tends to be of an *ad hoc* character and the implementation of a comprehensive educational policy is all but impossible.

517. These problems, as they existed twenty-five years ago, were discussed in some detail by the Goodenough Committee.* In our view action should be taken, without further delay, on the lines recommended by that Committee.† The teaching in each clinical department of the medical school and its associated hospitals should be brought under the direction of an academic head. The departments, in their turn, should be organised into major divisions for teaching purposes, each division being normally headed by a full-time Professor or other senior member of the university staff. The whole organisation should be governed by, and should contribute to, the educational policy of the school. The dividing lines should be flexible and allowed to change as required by future developments in medicine and education.

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* Report, pp. 148–149.
† Report, pp. 150–151.

CHAPTER 11

OVERSEAS TECHNICAL ASSISTANCE

INTRODUCTION

518. Our terms of reference required us to " review medical education, undergraduate and postgraduate, in Great Britain, and in the light of national needs and resources, including technical assistance overseas, to advise . . . on what principles future development (including its planning and coordination) should be based. . . ." In those aspects of our enquiry which relate to overseas technical assistance we have not restricted ourselves to the consideration of " needs and resources " but have given some thought also to the questions of planning and coordination which are involved in overseas aid in medical education.

519. We have received relevant evidence from the Ministry of Overseas Development, from a number of medical institutions, from individuals with experience of teaching in medical schools overseas and from bodies concerned with various forms of technical assistance. Much ground has already been covered by the first Commonwealth Medical Conference held in Edinburgh in 1965, which was a most valuable meeting (we are pleased that a second Conference is to be held in Uganda in 1968), and in various publications and proceedings of the World Health Organisation.

MEDICAL MANPOWER NEEDS IN DEVELOPING COUNTRIES

520. In Britain there are, in round numbers, 1,200 doctors for every million persons (see Table 1, p. 133), and in the United States of America 1,600 for every million persons; by contrast the number of doctors for each million persons is 170 in India, 25 in Nigeria, and 20 in Malawi. The number of doctors in relation to the population is low in most countries in Africa, Asia and Latin America.

521. The Executive Board of the World Health Organisation proposed to the 16th World Health Assembly in 1963 that the provision of one doctor to 10,000 inhabitants (i.e., 100 doctors for each million persons) should be regarded as the lowest acceptable standard for a health service in a developing country. Of the Commonwealth countries represented at the 1965 Commonwealth Medical Conference nine, all in Africa, fell below this modest standard. To reach it within ten years the developing countries of Africa alone would need some 13,000 more doctors ; over twenty years they would require an additional 1,200 medical graduates a year. Estimates made in 1962 at UNESCO's Tananarive Conference on the Development of Higher Education in Africa* suggest that until 1980, at least, this target could be reached only if a substantial proportion of degree students—perhaps over 10 %—opted for medicine,

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* The Development of Higher Education in Africa. UNESCO, 1963.

or were guided into it ; the necessary teaching capacity would also have to be available.

522. The governments of the developing countries must themselves decide how they will solve the major problems involved in meeting their needs for doctors ; our comments on these problems are derived largely from statements that Ministers of Health and educational leaders from developing countries have themselves made at international conferences and in published papers. When resources are limited they must be allocated where they are most needed. In addition to decisions on the number of doctors to be trained for medical care and medical teaching, and on the provision of their training, decisions have to be taken about training for medical administration and the training of medical auxiliaries : all these matters are closely related. We agree with the conclusion of the 1965 Commonwealth Medical Conference that a systematic study of health needs in each developing country—such as has been carried out, for example, in India and Tanzania—must precede the founding of new medical schools. The allocation of resources will inevitably differ not only from country to country but from time to time, and will be determined partly by the scale of investment in secondary education and partly by decisions made about its structure, scientific bias and staffing ; consequently any assistance that can be given by Britain or by international organisations in the making of development plans or of specific manpower surveys will help developing countries in deciding their policy for medical education. We recommend that the British government provide all possible financial and technical help for these purposes.

MEDICAL EDUCATION IN DEVELOPING COUNTRIES

523. Postgraduate professional training in medicine should be based on the kind of practice that the doctor will have to undertake. For example, an African trained in Britain will probably receive little instruction in the treatment of malaria, bilharzia, intestinal parasites, leprosy, smallpox and other conditions which commonly occur in Africa. Similarly in paediatrics he will not meet some conditions which are prevalent in children in a developing country. In surgery and obstetrics he will lack the experience necessary to deal with the emergencies which arise in a one-man station in a developing country. These disadvantages outweigh, in our opinion, the costs and other problems of providing postgraduate training for doctors within their own countries. We think developing countries are increasingly recognising this, and may well in future seek to provide postgraduate training before creating undergraduate medical schools.

524. The case for undergraduate education in the student's own country is less strong : the basic medical sciences and elementary clinical methods are common to all branches of medicine and all countries ; moreover, undergraduate medical education cannot make the same direct contribution as does postgraduate training to the provision of medical care. Furthermore, although a university contributes in manifold ways to the country in which it is sited, the cost of creating institutions of higher education—particularly medical schools—in developing countries is much bigger than that of educating in Britain undergraduate students from those countries, at the present level of

fees. The provision of sufficient research to keep medical teaching up to date, and teachers productive, presents another problem : where foreign aid is available on a large scale for equipment and recurrent costs, research can be reasonably broad ; otherwise topics of immediate local relevance must be selected for study.

525. Nevertheless, the general feeling in developing countries is that medical students should whenever possible receive their education, undergraduate and postgraduate, in their own countries, or at least in their own regions, rather than go to a more developed country. This feeling is not merely nationalistic : in the long run a large developing country must aim to educate for itself the doctors it will require in the years ahead rather than continue to rely on finding places overseas for its medical students. The amount that can be done will vary from one country to another. Countries with large populations may be able to establish universities of an advanced " research institute " type, but small countries may have to establish less ambitious institutions, perhaps of a liberal arts type, which can ultimately be advanced to full university status. In any case, for many years to come the medical education which can be provided within the developing countries will have to be supplemented by the continued provision of education for their students, both undergraduate and postgraduate, in the more developed countries. Indeed the need for foreign university places for these students can be expected to increase in the near future : countries too small to support their own medical schools will have to rely on medical education abroad to increase the number of their own doctors, and many other developing countries will probably be unable to increase the number of their medical school places at a rate commensurate either with their need for more doctors or with the rise in the output of sixth-form pupils from their secondary schools.

526. Proposals have been put forward for the training of " near-doctors " in developing countries. In some situations this may be not merely a helpful stop-gap measure but the most effective long-term method of providing medical care. Education programmes have been put into effect very quickly, however, and we agree with Professor W. Arthur Lewis* that a preferable policy may be to train large numbers of medical auxiliaries, and for graduate doctors to concentrate on the more difficult tasks and on administering the health services carried out by the auxiliaries. For this role, partly because of language difficulties and the need to work in isolation from specialist advice and laboratory analysis, the doctor in a developing country needs at least as full a training as his professional counterpart in Europe. Except in special situations this view seems to be now generally accepted by the medical leaders in developing countries.†

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* UNESCO Conference, Addis Ababa, 1961, on " Education and Economic Development ". (A substantially revised and extended version of the paper presented at the Conference appeared in *International Social Science Journal*, 1962, Volume XIV, No. 4, pp. 685–699.)

† *Lancet* 1966, i, 29, and 1966, i, 142.

AID TO OVERSEAS MEDICAL SCHOOLS

527. The total amount of assistance which Britain can give to developing countries in all fields is limited ; assistance in medical education is further limited by Britain's own need for doctors, and will inevitably be small in relation to the total needs of the developing countries. We assume that most technical assistance in medical education will continue to be provided on a bilateral basis. Even if a greater proportion were in future to be channelled through international organisations, assistance at the practical level would necessarily continue to involve individual schools, individual teachers and individual students ; most of our observations and recommendations should therefore still be applicable.

528. Most of the countries which at present receive substantial aid for medical education from Britain are members or former members of the Commonwealth. Apart from the obligations Britain has already incurred towards them, their use of English as the main language in higher education, and Britain's long history of association with them in medical matters, combine to generate the mutual understanding of objectives and methods which is essential if aid is to be appropriate and effective. In many of these countries, moreover, teachers trained in Britain or the United States have already established themselves as pioneers and pacemakers. Although some degree of redeployment of available resources cannot be ruled out, British aid in medical education seems likely for the most part to continue to be concentrated in those Commonwealth countries, and the few outside the Commonwealth, that are already receiving it. Many overseas governments, however, are reluctant to commit themselves to a single source of professional assistance in meeting so vital a national need ; for example, the medical school which is being established as part of the University of Zambia is to be developed with help from a number of countries, largely on lines recommended by a World Health Organisation team.* This attitude is prudent : we think Britain should be prepared to relate its contribution not only to the general needs of the receiving countries but also to the aid which they obtain from other sources.

529. Concentration of aid will not always be possible. For example, a regional centre of medical education might appear likely to be more economical and to provide a higher standard of education than a series of national centres ; but present regional political groupings are not necessarily permanent, and states may prefer their own nationally-based institutions together with cooperative exchange and mutual aid arrangements. Since the situation may differ widely, even within a single region, aid from Britain might best in some cases be used to help set up a complete medical school, and in others to help a particular department.

530. We have considered with particular interest a proposal, made by the Government of Malta at the Commonwealth Medical Conference in 1965, to expand the medical faculty of the Royal University of Malta so as to take up to fifteen students a year from the United Kingdom and other Commonwealth countries. Some of us visited Malta in July 1966 to discuss this

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* KING, M., *Lancet*, 1967, ii, 1031.

proposal. The University authorities there suggested that their preclinical entry should be increased from 40 biennially to 40 annually, that 25 places annually should be made available to Maltese students and that the remaining fifteen places should be divided about equally between students from the United Kingdom and from developing countries in the Commonwealth. The proposed expansion would have to be financed by a direct grant, or by helping students to pay fees which would cover the additional cost.

531. The proposal was supported by the Inter-University Council for Higher Education Overseas. We found, however, that the Department of Education and Science was unable, under present legislation, to make grants to universities outside Britain, and that the Ministry of Overseas Development could not subsidise the education of students normally resident in Britain. We thought that local authorities, who are normally responsible for supporting students in Britain, would probably be unwilling to meet the full cost of the education of a medical student in Malta, even if this were lower than the full cost of educating a medical student in Britain.

532. In our view the proposal to expand the medical faculty of the Royal University of Malta is basically sound. Although there are great difficulties in the way of enabling students from Britain to take advantage of it, the scheme could provide a useful addition to the number of medical school places available to other Commonwealth and perhaps foreign countries. We recommend that every effort be made by the Ministry of Overseas Development to help with the expansion in the most effective way.

533. In general we think the most effective way of deploying technical assistance to help the establishment and advancement of medical education in developing countries is by creating bilateral links between medical schools in Britain and those in developing countries. Close links between a large British faculty of medicine and an overseas school can, despite the difficulties involved, be enormously helpful in the early stages, in particular in reinforcing individual departments until local teachers can staff them fully. Existing and projected associations between medical schools in Britain and schools in developing countries are listed in Appendix 17. Some universities (e.g. those of London and the West Indies, and those of Birmingham and Rhodesia) have established schemes of special relationship whereby in each instance the former examines and gives degrees to the medical students of the latter and provides continuous advice and staff exchanges. Arrangements of this kind are unlikely to be adopted elsewhere, however, particularly in countries already creating their own independent and nationally-oriented institutions. Other examples of very close relationships are the initial help provided by the University of Glasgow and the Western Regional Hospital Board to the nascent medical school in Nairobi, and the link, financed by the World Health Organisation, between the medical faculties of Edinburgh and Baroda.

534. Only the larger medical faculties in Britain can, on their own, provide general support for overseas medical schools. Smaller institutional links, usually involving secondment of staff (considered by a Working Party under Sir Arthur Porritt in 1962*), were discussed at the 1965 Commonwealth

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* Report of the Working Party on Medical Aid to the Developing Countries. H.M.S.O., 1962.

Conference; they seem to offer more scope for the immediate future. For Lagos, to take one example of a quite new school, help from Britain might most usefully be concentrated in a single field of medical teaching and research ; it might be provided either by a single large British medical school, or by a consortium of smaller schools. The relationship between the Great Ormond Street Hospital for Sick Children and certain overseas medical schools illustrates the long-term benefit that accrues from such associations.

535. We think that all medical schools in Britain, either singly or in groups, should establish links with medical schools in developing countries. Such links are mutually beneficial, particularly when developed from the initially one-sided arrangements into regular exchanges of teachers, students and examiners. We do not minimise the difficulties of establishing a link of this kind, whether institutional or departmental. Its administration throws upon the dean's office a heavy burden of detail which it is not usually staffed to undertake, and which competes directly, in terms of staff time, with the internal administration of the medical school (see paras. 502–506). Links would be easier to foster if the normal staff complements of the British institutions concerned included a margin to allow for the release of staff for overseas appointments. Even if they are restricted to particular subjects, links between medical schools in this country and in developing countries can be really effective only when the British schools concerned have staffs big enough not only to provide an initial stimulus but also to maintain and increase it by a continuing flow of teachers. We hope that the number of teachers who take up these appointments will be substantially increased ; we suggest in paragraphs 538 and 539 some ways in which this might be done, with the help of the Ministry of Overseas Development. The Ministry at present contributes, on the request of overseas institutions and governments, towards the cost of overseas appointments. We think that the Ministry should also help to meet the administrative costs incurred by British medical schools in establishing and maintaining overseas links and should provide advice and guidance to British medical schools engaged in these activities. Schemes of this kind must be flexible, so that arrangements for the supply of British medical teachers in particular subjects can be used for the benefit of different countries as needs change. The staffs of departments and institutions responsible for these schemes must be imaginative and ready to review critically the purpose and progress of particular projects. We are confident that suitable staff can be found in the government departments concerned, in some hospital authorities, and in universities.

RECRUITMENT AND TRAINING OF MEDICAL TEACHERS FOR SERVICE OVERSEAS

536. The training and preparation of medical teachers for service abroad have received some attention from the World Health Organisation. There is an acute world-wide shortage of medical teachers, particularly in the preclinical sciences, social and preventive medicine, psychiatry, anaesthetics and ophthalmology. Recruits with ideal qualifications and experience may therefore not be obtainable. If their basic qualifications are good, the most important quality which we think such recruits need is inventive flexibility : any man or women who is willing to undertake a task as arduous as overseas

medical service, and in particular medical teaching, can be expected to have unusual personal qualities.

537. On the basis given by the late Sir Alexander Carr-Saunders and others in a background paper for the 1962 Tananarive Conference* we estimate that the number of medical teachers from the United Kingdom required by those universities of Middle Africa in which the language of study is English will rise from 70 in 1961–62 to about 200 in 1971–72. Thereafter the requirements are likely to fall gradually ; because of the rapid turnover of staff, however, recruitment will still have to be substantial and will involve altogether about 500 people in the period 1965–80. This is only part of the demand for British medical teachers to serve in developing countries.

538. The main recruitment agencies in Britain for medical teaching overseas are the Inter-University Council for Higher Education Overseas, the British Council and the Association of Commonwealth Universities ; some overseas universities which have a British office or a link with a university in Britain recruit staff directly. If the number of British medical teachers in developing countries is to be substantially increased, an adequate financial reward must be offered. Medical education overseas usually requires fairly young teachers of high ability, whose prospects in this country are good. Since they will often have family responsibilities, problems of children's education may have to be overcome. If such people are to be attracted to spend a number of years in a developing country their prospects for promotion at home must not suffer by reason of their absence. We believe there is a growing awareness that overseas experience is of value professionally and we hope that appointing boards will increasingly recognise this. Sir Harold Himsworth, Secretary and Vice-Chairman of the Medical Research Council, told us that he personally had found a knowledge of medicine in the tropics invaluable for the understanding of medicine in this country : it revealed completely unexpected features of disease and threw a new light on the kind of disease seen in this country. We suggest that the Ministry of Overseas Development should make a bigger contribution to the payment of the fares of doctors serving overseas who return home to attend interviews. Undoubtedly the best way to provide teachers for other countries is to second them from supernumerary posts in Britain and assure them of reinstatement, without loss of seniority, on their return to this country.

539. Short-term visits by senior teachers from Britain are a valuable and much appreciated method of helping medical education in the developing countries. Such visits can provide coverage of special topics in the medical course and temporary vacancies or enable the teaching of particular subjects to be evaluated ; they are expensive in fares, but they can usually be made without seriously upsetting the teacher's career and often without disturbing his family. Secondment of teaching staff for between three and six months may make a year's difference to the opening of an overseas school or to the inception of a course. We do not believe that its cost is excessive in relation to the contribution it makes to the output of doctors in other countries. Similarly, well-prepared visits by specialists—such as those undertaken by the staff of the Liverpool School of Tropical Medicine—may have very substantial

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* See the footnote on p. 214.

long-term effects on the planning of, and recruitment of staff for, new developments. We recommend an increase of Government assistance for short-term visits by senior teachers to medical schools in developing countries. The methods and purposes of medical education are increasingly becoming a field of expertise ; short secondments enable developing countries to have for a time the services of teachers who have thought about and practised systematically the best methods of medical education.

RECRUITMENT AND TRAINING OF DOCTORS FOR MEDICAL SERVICE OVERSEAS

540. Although technical assistance in medicine should in our view be primarily devoted to assisting the development of medical teaching overseas, so enabling developing countries to produce their own doctors, those countries will continue for many years to need doctors from Britain and other advanced countries to fill general and specialist posts in their medical services ; while they are overseas such doctors should be willing to take part in teaching or training in some form as well as to provide medical care.

541. In the past many British doctors spent much or all of their working life in British colonies. In most of these countries, which have gained independence, the situation has changed ; doctors from Britain who take up posts in developing countries usually go for a few years only and are not normally looking for a career there. At present the Ministry of Overseas Development recruits about 140 doctors a year for posts in the government medical services of developing countries and estimates that there are altogether about 500–550 doctors in such posts. There are at least 300 unfilled vacancies ; requests for staff are often not put forward because they are thought unlikely to be met.

542. Assuming political stability, the continuation of current technical assistance programmes and the successful conclusion of current negotiation between British and overseas medical schools, we estimate very roughly that the total of British doctors, including teachers, working in the developing countries ought to rise over the next ten years to 2,600,* a number which was probably equalled before the decreases that have taken place in the past fifteen years. Because of the growing practice of temporary secondment, and the quick turnover of staff, the doctors from Britain who are serving in developing countries can conveniently be regarded as part of the total of Britain's own doctors. If the need of 2,600 were met, slightly more than three per cent of the total number of British doctors would be in overseas service at any one time. The equivalent of an additional 130 graduates from British medical schools would be needed each year for the next ten years to bring the number serving overseas up to this level and to replace wastage (see Appendix 12, Annex).

543. Recruitment in Great Britain for medical service, as distinct from medical teaching, overseas is carried out mainly by the Ministry of Overseas Development, the Missionary Societies working together or individually, and the London offices of some overseas governments. Many young doctors have probably been deterred from volunteering for service in developing

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* See Appendix 18.

countries by the fact that practical experience in a tropical country has seldom been accepted as a substitute for training in Britain ; this is a situation which we hope will change (see paras. 76 and 538). We welcome the " Young Doctors " scheme recently introduced by the British Government. The essence of the scheme is that a young doctor is offered, after registration, about fifteen months' further training at a level rather higher than he would otherwise expect, against a contractual undertaking to serve overseas for a minimum of two years after completing the course. We understand, however, that recruitment under this scheme has fallen considerably short of the target of 50 doctors a year which was aimed at ; the conditions may have to be made more attractive to young doctors. Altruism, religion or a sense of adventure cannot be relied on for adequate recruitment to service posts overseas : an attractive salary should be offered during training and in service overseas, and the relevance of the experience to the doctor's future career should be made clear.

544. The Middlesex Hospital Medical School has made an interesting suggestion, which we endorse, that medical schools in Britain should send overseas highly-trained groups of doctors which would stay at one centre for a period of, say, two years, during which standards of practice would be established. Although during that time the membership of the groups might change, there would be continuity of method and purpose throughout. This idea should in our view be broadened to take account of the contribution which can be made to postgraduate medical training, as well as to medical service, in developing countries by individual Consultants who lack formal teaching experience. We believe that there are many experienced Consultants in the National Health Service who, given the right conditions, would be willing to accept short-term appointments at district hospitals in developing countries. They could provide invaluable guidance and supervision for junior hospital doctors, a greater number of whom could thus obtain suitable professional training in their own countries. This would clearly be valuable for their countries from the point of view both of medical education and of patient care.

RESEARCH

545. In accordance with long-established policy, the British Government provides substantial support for research in tropical medicine : for example, in 1966–67 the contribution of the Ministry of Overseas Development in this field was about £550,000. Recently, however, the main problem has been not so much financial as one of finding and retaining the services of scientists with the necessary experience and flair for medical research overseas. In the absence of the career prospects which the Colonial Medical Service formerly provided there are few British expatriate recruits for tropical research posts overseas. Research posts in tropical medicine which are based in this country are likewise unattractive : their lack of security, and the competition offered by the prospects available in other careers, has hindered the recruitment of British scientists. Although in many developing countries in Africa locally-born graduates with ability in medical research are emerging at lower levels and many will become capable of work at a higher level, the developing countries recognise that there will not for some years be enough such people to maintain medical research at a high standard without outside help.

546. We believe that Britain has for many years to come an essential, though relatively small, part to play in research in tropical medicine ; steps should be taken to attract into this work sufficient British scientists of high quality. The best hope of overcoming the difficulty of recruiting enough British scientists for research overseas in tropical medicine in the critical years immediately ahead lies in the appointments now being made by some universities and other institutions in Britain which give the assurance of a job here after the overseas assignment has been completed (see para. 538). We recommend that more posts of this kind be established, so that scientists with experience in research in tropical medicine can be persuaded to accept invitations to work overseas.

547. The Ministry of Overseas Development may need to consider helping developing countries to pay for the services of scientists working in this special field. We understand that the Liverpool School of Tropical Medicine has trained Lecturers in tropical medicine available for service overseas but that many promising opportunities have had to be missed because the countries concerned have been unable to meet the requirement of the Ministry of Overseas Development that the developing country must pay the basic cost of the post : we think that this requirement should sometimes be waived. We should also like to see more opportunities provided for close and effective cooperation between overseas research workers and centres of tropical medical research in this country : adequate provision is required for travel in both directions.

548. British teachers and research workers will continue to need research facilities in tropical countries. The Deans of the Liverpool School of Tropical Medicine and of the London School of Hygiene and Tropical Medicine told us, however, that in their opinion the upkeep of tropical outposts by their Schools would not be justified ; they suggested that in many tropical subjects a wide geographical range of research opportunities was needed which no single overseas unit could provide. They thought it preferable to rely on the facilities of units such as those maintained by the Medical Research Council at local universities or elsewhere. The Secretary of the Medical Research Council told us that the Council was most anxious to maintain its five overseas research units, which provided research workers with new points of view and expanded their horizons.

A CENTRAL ADVISORY OFFICE

549. Many complex decisions are involved in the provision of aid to developing countries in medical education ; acquiring and evaluating the information on which these decisions must be based is difficult. If British aid is to be of the greatest possible benefit to other countries, those responsible for planning it must have some way of evaluating competing projects and comparing their merits.

550. We think that a central office, independent of the Government but with support from public funds, should be set up in Britain to give advice to governments, to other organisations and to individuals both overseas and in Britain (see para. 569). The staff of the office should appreciate the current needs of developing countries in medical education. They should also have

up-to-date knowledge of the resources available in Britain for technical assistance overseas in medical education and of all existing commitments in this field, irrespective of the sponsor ; arrangements for the provision of medical education in Britain for students from developing countries should be included. The office should keep a register of people from Britain who visit developing countries in connection with any aspect of medical education, and should as far as possible collect centrally the reports that are made of the visits. The office should keep itself abreast of developments in medicine in Britain and should try to give developing countries well-informed advice about the current organisation and methods of British medical education ; it should also be a centre for the dissemination of information on teaching methods and practice and of teaching aids including films, sound and videotape recordings and pathological specimens.

OVERSEAS MEDICAL STUDENTS IN GREAT BRITAIN

UNDERGRADUATE STUDENTS

551. We have given in paragraph 525 some reasons why the demand for medical school places in advanced countries for students from developing countries can be expected to increase in the years ahead. The Ministry of Overseas Development has suggested to us that in British universities the proportion of overseas undergraduates ought to be substantially greater in medicine than in higher education generally (in 1966–67 about 7%) and that the proportion of overseas students in medical faculties should return to the level it reached in 1955–60, which was about 10%. The number and proportion of overseas students in the annual intake of preclinical courses in Britain since 1960 is shown in Table 14.

TABLE 14
Overseas Students who entered Preclinical Courses in Medical Schools in Britain, Academic Years 1960–68

Academic Year	*Number*	*% of Intake*
1960–61	232	11·5
1961–62	207	9·8
1962–63	157	7·2
1963–64	115	5·0
1964–65	150	6·2
1965–66	166	6·7
1966–67	111	4·4
1967–68 (provisional)	113	4·4

552. The decline in numbers between 1960–61 and 1963–64 coincided with the provision by the University Grants Committee of additional grants to British universities to enable them to increase their intake of British-resident medical students. There is no evidence that qualified overseas candidates were lacking

then or later ; such evidence as we have, from three medical schools, suggests that qualified applicants were far in excess of the number of places which could be offered. Although no enquiry has been made into wastage among students from overseas, the proportion of overseas entrants eventually graduating is not notably different from that of students normally resident in Britain. We think the number of overseas entrants has been determined not by their quality but largely by the need for places for British-resident applicants.

553. Reliable statistical information as to the countries of origin of overseas undergraduate medical students is not easily obtainable. Regular and prompt routine circulation of this information to interested bodies would be helpful. In 1961, about 15% of the overseas undergraduate entry came from countries with developed systems of higher education.* The number of such students appears to be falling, and will probably be further reduced by the recent substantial increase in fees payable by overseas students at British universities. In the future all but a handful of overseas entrants will probably come from developing countries, and most of them will probably be supported either by the British Government or by their own governments.

554. Any long-term reduction in demand from the more advanced of the developing countries will, we think, be balanced by an increase in applications from other countries which are now expanding and improving their secondary education systems, even though such countries may have medical schools of their own. Small countries, or territories, without medical schools will continue to send students to Britain. We do not think that a fixed proportion of places at British medical schools should at present be allocated to students from developing countries but because of the urgent needs of developing countries there is a strong case for increasing the number of such students. We think an annual entry of 200 by about 1975 should be aimed at (see para. 367). In the longer term perhaps 7–10% of the entrants to any one medical school should, for planning and organisational purposes, be expected to have come from developing countries.

555. Not all developing countries can offer adequate facilities for achieving the level of knowledge in chemistry and other basic science subjects which a student needs before he can begin the medical course (see paras. 304–310). We hope that the potentialities of technical colleges in Britain will be fully used by prospective medical students from overseas, even if such students do not remain in this country for the undergraduate medical course.

556. The selection of overseas undergraduate students by medical schools will be simpler if the majority are, in effect, sponsored students pre-selected by supporting agencies and if all applications are, in future, handled by the Universities Central Council on Admissions. Nevertheless, if medical schools are not to restrict their choice to students from countries and schools already well known to them, they will continue to need details of the previous education of applicants and background information about local developments in secondary education, especially from those countries now beginning to

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* Estimate based on findings of an enquiry made in 1961 by the Association for the Study of Medical Education (see Appendix 19, p. 322).

present more qualified applicants. We suggest that in such cases admissions officers should seek information from the secretariat of the Schools Council for the Curriculum and Examinations, who will often have up-to-date information readily available about overseas qualifications up to the equivalent of G.C.E. "A" level. We understand that the Ministry of Overseas Development is always willing to give as much information as it can on the needs of developing countries, and the new central office which we have proposed (see para. 550) could be particularly helpful.

557. Undergraduate students from overseas, plunged perhaps for the first time into a large city and, at first, with few or no friends to turn to, are often in need of orientation and guidance. Student bodies often take special care to induct and advise them but something more is called for : many overseas students are several years older than their British counterparts and will turn more readily to older mentors who are prepared to speak freely and self-critically about local institutions and sentiments, without avoiding the problems of informal colour-bars and of local stereotypes about Asians or Africans and the less pleasant aspects of the local society. Formal orientation courses have some value, provided they include ample provision for discussion between the speakers and the overseas students taking part, but informal individual contacts are to be preferred. Such contacts can, in some schools be provided by advisers to students and " moral tutors ", but we think that a valuable part of an overseas student's experience in this country will be his contact with practising doctors, and through them with the medical code of professional conduct. We hope, therefore, that medical schools will arrange with the medical profession for a local doctor (a general practitioner will often be the best choice) to be assigned to each overseas student, if he so wishes, as an adviser and informant. Such arrangements will not always be successful, but we think the possibility of failure is not a good reason for not trying them. Undergraduate students from overseas should have precedence in the allocation of places in halls of residence ; in their first year, at least, all should be in university residential accommodation with British students.

558. Our proposals in Chapter 4 provide for degrees in medical science to be awarded during the normal undergraduate medical course. Until these proposals are implemented overseas students, and particularly those who have the qualities of potential medical teachers, should have the same opportunities as British-resident students to take intercalated science degree courses. Requirements for university admission should be relaxed for sponsored overseas students. Universities ought not to find difficulty in devising application forms which will give them much of the information needed about the student's previous education ; supplementary information can often be obtained through linked medical schools overseas or through associations of universities.

POSTGRADUATE STUDENTS

559. The postgraduate medical education and training received in this country by doctors from overseas suffers generally, in the same way as that of young British doctors, from inadequate organisation (see paras. 70–72). Overseas doctors often arrive in Britain without any previous arrangements for work or study here ; many remain for a long time in this country,

repeatedly entering for the higher examinations of the Royal Colleges even when their chances of success are clearly very small. The defects and deficiencies of the present system probably bear more hardly on overseas doctors, who have great difficulty in securing appointments to posts which will provide a good training. They are usually unfamiliar with the British hospital system. We found with surprise that overseas doctors who enter this country are not provided on arrival with information about the organisation and operation of the National Health Service, knowledge of which is apparently expected to be acquired casually ; we recommend that a pamphlet giving such information should be prepared and distributed by immigration officers to all persons with medical qualifications who arrive from overseas.

560. A minority of the overseas postgraduate medical students in Britain are sponsored by their own or the British government, or by international agencies, charitable foundations or business enterprises. About one thousand of these students are pursuing full-time courses for higher professional qualifications, postgraduate diplomas or higher degrees. The remainder are interested mainly in getting practical professional training and clinical experience ; they have included in recent years about 200 supported annually by British Government agencies. Some measures have already been taken to increase the number of medical scholarships for senior postgraduate studies from 75 to 150 or more, as a result of a proposal by the British Government at the Commonwealth Medical Conference in 1965 ; these are additional to places supported at postgraduate training institutions under regional programmes of technical assistance. How far this rise will offset the effect of higher fees remains to be seen. Unless Government support to developing countries is substantially increased in this field, some students sponsored by the poorer developing countries, with severely restricted budgets for higher education, may be diverted from Britain to countries which have lower costs or which are prepared to subsidise them, particularly the United States of America, the Union of Soviet Socialist Republics, France and Germany. We assume that the general situation will be closely watched by the Health Departments and the Ministry of Overseas Development, and will be discussed in a review of medical aid schemes at the second Commonwealth Medical Conference in 1968. The provision of suitable training posts for part-time students should be encouraged. For example, the University of Glasgow and the Western Regional Hospital Board have reserved several appropriate hospital posts for overseas postgraduate students who intend to take part-time university courses. The professional colleges could help by recognising, for the purposes of their training requirements, honorary posts in appropriate hospitals where the necessary experience of clinical responsibility could be gained by overseas doctors holding British government training awards. More residential accommodation should be provided for postgraduate medical students from overseas, either by universities for those pursuing full-time academic courses or by hospital authorities for those in clinical training posts.

561. The great majority of overseas doctors seeking training in Britain are unsponsored. They are usually dependent on small family or personal savings expended while they look for junior hospital posts, which they usually hope will provide some kind of training that will lead them towards a higher professional qualification ; without their services many of the smaller

hospitals would face grave difficulties. The recent rise in fees for overseas students will presumably reduce the number of unsponsored students who come to Britain to pursue full-time postgraduate courses ; its likely effect, if any, on the manning of the hospital service is difficult to assess.

562. We have no reliable information about the number, origins and length of stay of unsponsored overseas postgraduate medical students in Britain. The records of the Ministry of Health suggest that the majority of such students, having gained experience and sometimes higher qualifications, return home after spending several years here : their period of training is therefore an important contribution to the technical assistance which Britain can give to developing countries. From discussions which some of us have had with doctors from overseas, and from the evidence we have received, many doctors from overseas clearly have great difficulty in obtaining the kind of post they need for their postgraduate training, and hardly any obtain posts in university teaching hospitals. In 1966 the Health Departments introduced a voluntary attachment scheme for doctors who of their own accord come to Britain to seek further training. This scheme, which provides the student with an initial short period of attachment to a clinical unit of good standing during which his requirements and potentialities can be assessed, was long overdue. We understand that in future unsponsored overseas candidates for hospital appointments in Britain may be required to make use of the clinical attachment scheme on arrival, unless they have already obtained posts as Registrars or in a higher grade. We welcome this development, although we realise that it will involve considerable additional work for the Consultants involved. We think the scheme may need to be extended further if overseas trainees are to be properly fitted, as we hope they will be, into the scheme of general professional training that we have proposed in Chapter 3 of this Report.

563. We hope that the arrangements we have proposed for general professional training will end the present haphazard nature of the training received by many young doctors from overseas. We have said in paragraph 83 that overseas doctors who come to Britain for general professional training should have opportunities similar to those of British graduates, and that a number of approved training posts should be set aside for them. We think, however, that postgraduate students from overseas should have postgraduate experience in their own countries before they come to Britain. Although regard should, as far as possible, be paid to the special needs of trainees from other countries, Britain cannot provide experience of the disease patterns and working environment of developing countries (see para. 523) and, in general, cannot offer postgraduate training very different from that required by British-resident doctors. We hope that most overseas doctors who intend to come to Britain for general professional training will be able to undertake the first year of such training in approved posts in their own countries and that the selection to which we refer in paragraph 86 should whenever possible take place in the doctor's own country. The professional colleges would need to appoint advisers in each main overseas centre to supervise such arrangements and to report on the suitability of applicants for training in Britain, both sponsored and unsponsored. Some of the preliminary orientation required by overseas doctors could be given by these advisers. To ensure the success of the scheme,

advisers permanently resident abroad should be enabled to visit Britain from time to time (perhaps under British Council auspices) in order to maintain contacts and keep abreast of changes in postgraduate medical education. We think the certificate given on satisfactory completion of general professional training (see para. 95) will be of value to overseas doctors when they return to their own countries. Doctors from developing countries should be accepted for further professional training in the Junior Specialist grade (see para. 107) in Britain provided that they had already had a general professional training equivalent to that which British doctors will have received ; a certain number of posts, including posts designated as suitable for intensive training, should be set aside for them.

564. We think that doctors from developing countries who cannot be properly accommodated within the training arrangements which we have recommended, or in similar arrangements made by other advanced countries, should be expected to find their training in their own countries—which in our view would in many ways be better for them. We also hope that doctors from developing countries who do obtain approved training posts in Great Britain will return to their own countries on completion of their training appointments. Some overseas governments would like Britain to help them to ensure the return of their nationals after training here. We are by no means certain, however, that the British Government could effectively administer a bonding system to which it was a third party. In certain instances delay in return may be due to a loss of contact with job opportunities at home ; this is perhaps most frequent when official representative staffs in this country are small and overworked. Hospital authorities in Britain might perhaps consider how far they could help in filling vacancies in the countries concerned. The initiative must rest with overseas governments, but a helpful step which should be taken on its own merits would be the provision of regular reports on each overseas student by his supervising Consultant in Britain : such reports might perhaps be made available to prospective employing authorities in his home country, so as to help them to offer suitable employment at the right time. We are of course aware that our proposals might reduce the number of overseas doctors who at present, while nominally in training, in fact make an essential contribution to the staffing of British hospitals. We have taken this factor into account when considering the number of medical school places required in Britain (see Chapter 6).

565. Many overseas doctors come to Britain specifically to study for the Diploma in Public Health. Some witnesses have told us that this diploma has little relevance to tropical countries but, because it is regarded as a specialist qualification, it enjoys a higher standing than the alternative Diploma in Tropical Medicine and Hygiene, which is primarily intended to fill a gap in the undergraduate education offered in British and most overseas medical schools. We think that any such distinction is unfortunate and wasteful. We welcome the recent steps taken to strengthen the staffing of the two postgraduate schools offering courses which lead to the Diploma in Tropical Medicine and Hygiene, and the initiative of the Liverpool School of Tropical Medicine in introducing tropical hygiene, as an elective subject, into the course for the Diploma in Public Health.

Chapter 11

INSTRUCTION IN THE ENGLISH LANGUAGE

566. Medical students from overseas normally have an adequate comprehension of medical texts and a good enough command of colloquial English for social situations ; but many lack—as would a well-prepared British student placed in a similar situation abroad—a quick understanding of the idioms, allusions and variations of intonation used by patients or in lectures, demonstrations and seminars. This is a very different matter from mastery of the scientific vocabulary or of formal syntax and grammar. The British Council has already recognised this problem and, in London at least, provides English courses for medical students at the Overseas Student Centre. The British Council cannot, however, be expected to assume general responsibility for such a specialised requirement, and in any case there are many advantages in taking language instruction at the same place as the student's main studies. We recommend that the medical schools or their parent universities—which will normally employ specialists in linguistics, often including some familiar with the more unusual languages of overseas students—should organise instruction to improve their students' acquaintance with the spoken language of ward, classroom and laboratory. Some universities will already have self-service language laboratories in which tapes of medical lectures or discussions, with typescript texts and explanations, can be deposited. Elsewhere, if numbers are big enough, internal advanced language courses can be offered, as they have been at the London School of Hygiene and Tropical Medicine.

CHAPTER 12

EPILOGUE

567. Our review of medical education in Britain has been brief and selective. We hope that we have chosen wisely the matters to which we have devoted our attention and that our views on them may promote the advance of medical education. For every question we have tried to answer, however, there are others that still demand attention. If we had felt able to approach our task at greater leisure and in more detail we should have wished to consider at length many matters which are touched upon only briefly, if at all, in our Report. But we were from the outset convinced of the urgency of our task. We were appointed at a time when many factors, not least the growing shortage of doctors, made clear that practical decisions must soon be taken in medical education. In our view, if the completion of our work had been delayed our recommendations might well have been rendered inoperative because major decisions had already necessarily been taken ; indeed even during the comparatively short period occupied by our review certain practical decisions have had to be taken which, from the standpoint of medical education, are not precisely as we would have wished to see them.

568. Many of the problems of medical education are found in university education generally. Problems of this kind arise, for example, in connection with educational methods, the length and starting-date of the university year, and the financing of university education. We have not discussed such problems : important as they are, we do not think they should be considered solely in the context of medical education. Although specifically excluded from consideration by our terms of reference, problems concerning dentistry and medical ancillary services have from time to time come to our notice. Medical and dental education have common features, as have the professions to which the education leads ; the changes we have recommended in medical education may well affect dental education indirectly. Future developments in medicine and in the pattern of medical care will surely call for substantial increase in the number of ancillary staff and of trained health and welfare workers. In our view a comprehensive review both of training facilities and

of career structures in these fields is needed. Without adequate staffing of such services improvement in the education of doctors and increase in their number will not be fully effective.

569. No once-for-all review could adequately provide a solution to all the problems facing medical education now and in the future ; we hope that our effort will be only the start of a continuing process of evaluation, discussion, and improvement covering all aspects of the subject. We are confident that the General Medical Council will continue to exercise positively and vigorously its responsibility for maintaining the standard of medical education in Britain. But in so doing the Council will need to draw on information which can only be obtained by systematic study of, and research into, the aims, methods and effectiveness of medical education. We have been impressed by the valuable contribution which the Association for the Study of Medical Education has, despite its slender resources, made to the promotion of interest and research in this field. We hope that the Association will be placed on a secure footing, perhaps in close association with the General Medical Council, and that the continuation and extension of its work will be vigorously supported. We consider that the Association should be closely linked with provision of the examination service that we have recommended in paragraph 285 and with the central advisory office for overseas enquiries that we have recommended in paragraph 550.

570. We present this Report in a period of economic difficulties when Britain can ill afford additional expenditure. We hope, nevertheless, that action will follow swiftly on the publication of our Report. Good medical care is one of the foundations of civilised living and without an adequate system of medical education it cannot be assured. We have recommended no more than that which we believe is necessary to ensure that medical education in Britain will keep abreast of progress and that it will provide in adequate number the doctors Britain needs to maintain in the future a standard of medical care appropriate to our society. Some of our recommendations will require changes in legislation to make them fully effective. We hope that these changes will not be long delayed and that meanwhile the present law will be interpreted by all concerned in the spirit of our approach to medical education. That approach rests on two themes, flexibility and experiment. Although specific recommendations about the detail of courses may well become obsolete with the passage of time, we believe that our approach will remain appropriate and valid so long as medicine continues to grow and develop, as it surely will.

571. In conclusion we wish to place on record our gratitude to our able and indefatigable Secretary, Mr. M. W. Hodges, whose exceptional skill, tact, and efficiency have greatly eased our work. Our thanks are also due to our Assistant Secretary, Mr. W. G. Hammerton, and our Statistical Adviser, Mr. W. Brass, for the substantial services they have rendered, and to all the other staff of the Commission, whose devotion to their task has made possible the production of this Report. We also record our indebtedness to our hosts in the various countries and medical schools which we have visited in the

course of our investigations for their hospitality and the time and effort which they freely gave to assist us in our enquiries. Finally, we wish to thank all our witnesses for the help given us by their compilation and presentation of the evidence essential to our review of medical education.

ALL OF WHICH WE HUMBLY SUBMIT FOR YOUR MAJESTY'S GRACIOUS CONSIDERATION.

TODD (*Chairman*)
PLATT
E. F. COLLINGWOOD
BRIAN WINDEYER
P. B. MEDAWAR
J. R. ELLIS
JOSEPHINE BARNES
G. M. CARSTAIRS
G. F. DIXON
A. W. KAY
JOHN N. M. PARRY
R. M. TITMUSS
F. G. YOUNG
J. N. R. BARBER
ELIZABETH M. CHILVER
C. M. FLEMING
G. M. WILSON

M. W. HODGES (*Secretary*)
W. G. HAMMERTON (*Assistant Secretary*)
30*th March* 1968.

APPENDIX 1

ORGANISATIONS AND INDIVIDUALS WHO GAVE EVIDENCE

(a) *Organisations and Individuals who Submitted Written Evidence*

Those who gave oral evidence in addition to written evidence are marked *. Persons or organisations jointly submitting memoranda are listed separately if they numbered six or less. Seven memoranda were each signed by more than six persons; in these instances only the name of the person by whom the memorandum was submitted is listed. Institutions visited by groups of members of the Royal Commission (see para. 3 of the Report) are marked †.

*University of Aberdeen
Professor D. B. Allbrook
Professor C. B. Allsopp
*Anatomical Society of Great Britain and Ireland
*Professor J. Anderson
Dr. J. A. D. Anderson
Mr. P. R. Andrews
Assistant Masters' Association
Association for the Study of Medical Education
Association for the Welfare of Children in Hospital
Association of Anaesthetists of Great Britain and Ireland
Association of Assistant Mistresses
Association of British Neurologists
Association of Clinical Biochemists
Association of County Councils in Scotland
*Association of Head Mistresses
Association of London University Clinical Academic Staff
Association of Municipal Corporations
Association of Occupational Therapists
*Association of Teachers of Psychiatry in Undergraduate Medical Schools
Association of University Clinical Academic Staff
*Association of University Teachers (Working Party)
Association of Welsh Executive Councils
*Dr. P. A. J. Ball
Dr. Rosemary M. W. Bamforth
Dr. J. A. Barclay
Professor R. Barer
Dr. H. G. Barnes
*Mr. I. G. Barnett
University of Bath
The Bethlem Royal Hospital and the Maudsley Hospital
Mr. P. G. Bevan
*Biochemical Society
Birmingham Local Medical Committee
*Birmingham Regional Hospital Board
United Birmingham Hospitals
†University of Birmingham: Faculty of Medicine
Mr. P. Blaker, M.P.
Mr. D. E. Bolt
Dr. David Bowsher
Mr. D. W. Bracey
Brighton and Lewes Hospital Group: Consultants' Committee
University of Bristol: Faculty of Medicine
British Academy of Forensic Sciences
British Association of Manipulative Medicine
British Association of Oral Surgeons

British Association of Otolaryngologists
British Association of Paediatric Surgeons
British Association of Urological Surgeons
British Broadcasting Corporation: Department of Further Education
British Dental Association
British Dietetic Association
British Federation of University Women Ltd.
British Geriatrics Society
*British Medical Association
British Medical Association: Coventry Division
British Medical Association: North Lancashire and Westmorland Branch
*British Medical Association: Scottish Council
*British Medical Students' Association
British Medical Students' Association: Glasgow University Members
*British Medical Students' Association: Scottish Region
British Medical Students' Trust
British Pharmacological Society
*British Postgraduate Medical Federation
  †Institute of Basic Medical Sciences
  Institute of Cancer Research: Royal Cancer Hospital
  Institute of Cardiology
  Institute of Child Health
  Institute of Dermatology
  Institute of Diseases of the Chest
  Institute of Laryngology and Otology
  Institute of Neurology
  Institute of Obstetrics and Gynaecology
  Institute of Ophthalmology
  Institute of Orthopaedics
  Institute of Psychiatry
  †Institute of Urology
  Royal Postgraduate Medical School of London
British Psycho-Analytical Society and Institute of Psycho-Analysis
British Psychological Society
British Society for Immunology
Dr. C. W. Brook
Mr. David Brown
Professor J. C. McClure Browne
Brunel University
United Cambridge Hospitals
†University of Cambridge
*Dr. E. J. M. Campbell
United Cardiff Hospitals
Dr. J. E. Cates
Charing Cross Hospital Medical School
*Churches' Council of Healing
Professor S. G. Clayton
Dr. M. B. Clyne
Dr. N. F. Coghill
Professor P. Collard
*College of Pathologists
Committee for Homoeopathy in Universities and Teaching Hospitals
Confederation of British Industry
Conference of Postgraduate Medical Deans
Miss M. W. Cook
Dr. W. T. Cooke
Coroners' Society of England and Wales
Dr. Bryan Corrin
Dr. J. E. Cotes, jointly with nine other members of the scientific staff of the M.R.C. Pneumoconiosis Research Unit, Penarth, Glam.
County Councils Association
Professor S. D. M. Court

Coventry City Council
Coventry Hospital Consultants' Committee (Sub-Committee)
Coventry Local Medical Committee
Mr. P. G. Cull
Professor P. M. Daniel
Professor D. Russell Davis
Professor J. A. Davis
Mr. Bruce Delve
*Professor C. Dent
Dr. H. A. Dewar
Professor J. L. D'Silva
University of Dundee
University of Durham
University of East Anglia
Eastern Regional Hospital Board, Scotland
Economic Planning Council, West Midland Region
†University of Edinburgh
Department of Education and Science
Dr. Teviot Eimerl
Electroencephalographic Society
Elliot Medical Automation Ltd.
Dr. Patricia Elliot
Dr. R. E. Ellis
Dr. P. C. Elmes
University of Essex
Executive Councils' Association (England)
University of Exeter
Faculty of Homoeopathy
Faculty of Ophthalmologists
*Faculty of Radiologists
Dr. W. A. S. Falla
Family Planning Association
Flintshire County Council
Dr. P. B. S. Fowler
Dr. Alfred White Franklin
Dr. G. R. Freedman
Galenicals Society (University of Bristol)
General Dental Council
*General Medical Council
General Practitioners' Association
Glasgow Postgraduate Medical Board
†University of Glasgow
Dr. Graham Grant
Dr. C. L. Greenbury
Professor A. D. M. Greenfield, jointly with eight other heads of departments of physiology in the University of London
*Guild of Catholic Doctors
Sir Ludwig Guttmann
†Guy's Hospital Medical and Dental Schools
Mr. G. J. Hadfield
The Hahnemann Society
Professor Max Hamilton
Dr. A. Hargreaves
Mr. Bryan Hargreaves
*The Headmasters' Association
Headmasters' Association, Scotland
*Headmasters' Conference
*Ministry of Health
Ministry of Health and Social Services, Northern Ireland
Health Visitors' Association
Dr. R. A. Henson
Dr. A. G. S. Hill

Professor Kenneth R. Hill
Hillingdon Group Hospital Management Committee
Mrs. Stephen Hobhouse
Dr. Keith Hodgkin
Dr. W. W. Holland
Home Office
Homoeopathic Research and Educational Trust
Mr. R. A. Horton
Dr. A. S. M. Tasaddoque Hossain
Dr. J. W. Howie
†University of Hull
Professor P. J. Huntingford
Inner London Education Authority
Institute of Accident Surgery
Institute of Medical Social Workers
*Institute of Religion and Medicine
International Computers and Tabulators Ltd.
Inter-University Council for Higher Education Overseas
Isle of Wight Executive Council
Dr. Lester James
Dr. Arthur Jordan
Dr. C. R. B. Joyce
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Society for Research into Higher Education Ltd.
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Society of British Neurological Surgeons
*Society of Medical Officers of Health
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(b) *Organisations and Individuals who Gave Oral Evidence Only*

Professor Brian Abel-Smith
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Dr. R. I. S. Bayliss
Dr. G. M. Berlyne
Mr. W. A. Blackburn
Mr. D. C. Bowie
Professor Bryan Brooke
Committee of Enquiry, under the chairmanship of Lord Sainsbury, into the Relationship of the Pharmaceutical Industry with the National Health Service
Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom
Conference of Deans of the Metropolitan Undergraduate Medical Schools
Conjoint Examining Board in England
Dr. Oliver Cope
Professor Robert Debré
Mr. R. C. Dendy
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Dr. M. Hartog
Dr. R. Herrington
Dr. T. C. Hunt
Dr. R. D. Lowe
Dr. George J. R. McHardy
Dr. D. L. Miller
Dr. J. F. Mowbray
Dr. N. Mrosovsky
Mr. E. G. Muir
Mr. W. J. Pearson
Mr. J. L. Provan
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Working Parties on the School of Medicine and Human Biology

APPENDIX 2

CHANGES IN THE SPECIALTIES AND FUTURE TRENDS—AN APPRECIATION IN GENERAL TERMS

An Extract from Evidence Submitted by the Ministry of Health and the Scottish Home and Health Department in May 1966

1. The last two decades have seen many new discoveries and developments in the established medical specialties. Over the same period, the application of advances in general science to medicine as a whole has resulted in the development of new sub-specialties employing new techniques and diagnosis and treatment over a wide range of medical problems. The marked shift in the age structure of the population which has been due, in part at any rate, to improved living and social conditions will no doubt be accentuated by these changes, and is itself posing new problems in medical care.

Population Changes

2. While the total population has continued to rise it is well known, and needs no further comment here, that old people have accounted for an increasing proportion of the total number. The rising birth rate and falling infant mortality has resulted at the same time in an increase in the numbers of young children. It is not surprising therefore that geriatrics and child care are prominent among the specialties selected for special mention in the succeeding paragraphs.

3. In the future, the General Register Office forecasts an increase of population in England and Wales from 47·4 million in 1964 to 50·2 million and 54·4 million in 1971 and 1981 respectively. In the dependent age groups, the *annual* increase which was fewer than 80,000 per year in 1961–2 is expected to reach a peak of over 430,000 in 1969–70 and thereafter decline steadily to a figure of 209,000 in 1980–81.* This pattern is very largely due to an increase in the number of young people under 15 years but nevertheless a continued general increase in the percentage of the total population classified as male over 65 years or female over 60 years is expected up to 1981 together with a continued fall in the percentage in the working age group.

Medicine in general

4. In 1944, when the Goodenough Committee reported,† the considerable changes in the pattern of disease and medical care which have resulted from the introduction of immunisation procedures and the discovery of antibiotics were about to begin. The application of advances in pharmacology, microbiology and immunology have produced a large number of new therapeutic agents which have completely altered the pattern of medicine. Anti-infective chemotherapeutic agents, hormone preparations, diuretic drugs and many other substances have joined with viral and other vaccines and immunological agents virtually to eliminate many previously intractable diseases and markedly reduce the hazards of others. The old type " fever " hospital and sanatorium have become redundant and the general practitioner has increasingly been able to deal himself with a wide range of curable disorders previously requiring admission to hospital. The multiplicity and complexity of possible treatments has, however, increased the need of the general practitioner for specialised guidance and advice from expert consultant medical staff specialising in ever narrowing sections of medicine.

5. It seems likely that the trends observed over the last 20 years will continue in the future and there is evidence to suggest that the use of immunological techniques may be extended to the control as well as the prevention of certain diseases

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* Economic Trends, No. 145, November, 1965. H.M.S.O.

† Report of the Interdepartmental Committee on Medical Schools. H.M.S.O., 1944.

and may play a part in the treatment of chronic conditions such as rheumatoid disease, which are known to be connected with disordered immunity mechanisms. The impact of applied science in the form of ultrasonics, electronics and modern data processing equipment will be mentioned later.

Child Health

6. The steep rise in the birth rate of the last few years has led to an increased number of young children (though the rate started to fall in 1965) but child health has improved greatly and the infant mortality rate has fallen from 40 per 1,000 live births in 1944 to 19·9 per 1,000 in 1964. Among children under one year of age respiratory diseases and congenital malformations are major causes of death. After the age of one year accidents and violence become of increasing importance until, between the ages of 10 to 14 years, nearly a third of all deaths are due to these causes.

7. The great improvement in paediatric and obstetric care is likely to result in an increasing number of mentally and physically handicapped children surviving. The development of early screening methods, together with rapidly improving methods of treatment and education, has focused attention on the needs of these children, particularly the very young. It is likely that they will make exacting demands on the hospital and community services, which will result in a greater integration in the future, in particular, hospitals co-operating with local health and welfare (and education) authorities to provide comprehensive assessment centres for handicapped children. At the same time, hospital day care and five-day wards will need greater support from the general practitioner and local health authority services. In the field of preventive health services general practitioners are likely to take an increasing part in the future.

Geriatrics

8. The development of geriatrics as a branch of general medicine concerned with the clinical, social, preventive and remedial aspects of illness in the elderly has been a feature of the past two decades and has been closely associated with the growth of the rehabilitative ancillary services such as physiotherapy and occupational therapy. The importance of close co-ordination between the hospital service, services provided by local health and welfare services and general practitioners is now more fully realised and will continue to develop.

9. The number of geriatric outpatient clinic sessions and the number of patients attending has increased steeply in the last few years. Similarly, there are now 56 geriatric day hospitals compared with only 27 in 1961. A closer link is being established between the geriatric physician and the psychiatrist and each is directing his attention to the psycho-geriatric element. An increasing proportion of the time of the general practitioner, the local authority domiciliary and residential services, the hospital service (particularly general medicine and orthopaedics) is being devoted to the care, the treatment and the support of elderly patients. The welfare services are also increasingly concerned with provision for this age group and it is considered that this trend will continue at an ever-increasing rate.

Mental Disorder

10. Mental illness is another specialty in which the application of new advances in pharmacology have revolutionised the pattern of disease and medical care and in which the accent is increasingly on the return of the patient to community life. During the 1940s electroplexy (E.C.T.) became the treatment of choice not only for depressive disorders but also for schizophrenia. Deep insulin coma therapy and various forms of leucotomy were also widely used, sometimes in conjunction with E.C.T. The psychotropic drugs, particularly the phenothiazines, came into general use in about 1954 and have since largely replaced leucotomy, insulin and E.C.T. in the treatment of schizophrenia. The more recent introduction of the anti-depressant drugs has had far-reaching effects on the management of depressive illness in and outside hospital. Due in part to these advances in drug therapy, the

regime in mental hospitals has become more liberal and less custodial, while parallel changes in attitudes to mental illness have promoted non-authoritarian relationships between staff and patients in what has been called the "therapeutic (hospital) community". At the same time, the extent of outpatient care has steadily increased, duration of stay in hospital has been dramatically reduced, and the number of occupied beds in mental hospitals continues to fall.

11. Since the implementation of the Mental Health Act, 1959, liaison between local health authorities and hospitals has been directed, though slowly, towards establishment of joint clinical and social services to provide for "community care" of patients rather than admission to hospital. This trend has stimulated interest in the part played by social factors in psychiatric morbidity, and has led to the development of "day hospital" facilities and of various methods of social and industrial rehabilitation.

12. There has also been growing emphasis on community care of the mentally subnormal accompanied by increasing provision of training centres and hostels. As a result fewer higher and medium grade subnormal persons are being admitted to hospital and these now contain a greater proportion of severely subnormal patients. The introduction of tranquillising drugs has facilitated management and training of over-active patients. The last twenty years has seen many advances in our knowledge of metabolic and chromosomal abnormalities. Some of these conditions are suceptible to treatment and the importance of early detection, diagnosis and assessment has already been mentioned in the paragraph on child care. With the increase of subnormal patients living in the community, the need for general practitioners to understand their problems and to continue the care of such cases in the community will increase.

Surgery in General

13. While the introduction of anti-infective chemotherapeutic agents has had a marked effect on surgical procedures, the great advances and the increasing complexity of modern surgery have been made possible largely as a result of modern anaesthetic techniques. New scientific methods and principles developed in disciplines other than medicine have been applied more in surgery than in other specialties and the use of new materials, including plastics, and close collaboration with engineers has led to the development of modern prostheses of very high quality and to the introduction of replacement surgery using artificial material. Replacement surgery using human organs and tissues has also developed along with a wide range of highly specialised procedures of other kinds applicable to all parts of the body. The trend has been towards increased specialisation and the development of expert teams dealing with very complicated and highly technical operative procedures and employing expensive and sophisticated equipment. Many of the new operations can be life-saving and they are becoming increasingly possible at both extremes of life.

14. While the trend towards specialisation seems likely to continue, and the demand in for example urological, cardiac, paediatric and gynaecological surgery will probably increase, there has been a tendency for the simpler types of general surgery to be dealt with more expeditiously by shorter periods of inpatient treatment. The development of effective outpatient treatment ("one day surgery") for varicose veins and even simple hernia has been successful and could expand in conditions where adequate home care is available in the recovery period.

15. It is worth mentioning under this general heading that deaths due to accidents have increased by 25 per cent over the last ten years while the population increased by only 4 per cent. Non-fatal accidents have similarly increased and the multiple injuries from which the victims suffer require the facilities of a 24 hour accident centre, equipped with modern diagnostic and resuscitative equipment and the attention of specialist staff. Such arrangements can only be made at district general hospitals.

Obstetrics

16. The most important developments in this field have been the emphasis on ante-natal care and the progressive increase in the percentage of mothers delivered in hospital. The adoption of the recommendations of the Cranbrook Committee,* together with a large increase in the hospital maternity provision, is leading towards a unified maternity service in the future. In some areas the medical care is gradually assuming a pattern whereby patients are cared for both by consultant obstetricians and general practitioners; the bulk of the care for normal midwifery patients at home or in hospital being provided by general practitioners and for the abnormal midwifery patients by consultant obstetricians. The paediatrician is assuming an increasing role in the obstetric departments, especially in the care of premature infants and those requiring special care. The perinatal mortality has been declining rapidly over the last twenty years and a high degree of skill in obstetrics and in the management of the neonate is becoming even more necessary. It is important to recognise that the newly qualified doctor has had an insufficient training in practical midwifery for him to be competent to practise in this field either in hospital or as a general practitioner, and the Departments think it right that the necessary experience should be gained as part of postgraduate training.

Science in the Medical Field

17. Passing reference has been made to the impact of science in other paragraphs and the last ten years has seen the development of the heart/lung machine, renal dialysis, replacement surgery, the use of hyperbaric oxygen, cardiac pacemakers, defibrillators and the development of a variety of electronic devices for the measurement and recording of physiological variables of many kinds. Scientific advances of these kinds will continue to be incorporated into medicine and will continue to demand the provision of special facilities and highly trained staff for a proportion of inpatients.

18. Hand in hand with the development of new treatments aided by or made possible by recent scientific discoveries there has been a demand for increasingly comprehensive diagnostic and investigational services. The development of clinical pathology and diagnostic radiology has been a natural corollary to the developments in other fields and those departments too have become increasingly specialised. The steadily rising demand for investigations by hospital staff has been augmented by the demands from general practice. This tendency has been particularly marked in the field of clinical pathology. The results of appropriate laboratory tests or x-ray examinations enable practitioners to make firm diagnoses and themselves undertake treatment of many patients who would otherwise have to be referred to an outpatient clinic. The large numbers of requests and the shortage of trained technical staff has encouraged the development of automated methods in service departments particularly in relation to clinical pathology, and this trend seems bound to continue.

19. The advent of electronic data processing and of computers is now opening up whole new fields for clinical medicine and for administration and management. It seems likely that the efficient collection and processing of vital information at speeds which will make the results available to the users in time for appropriate action to be taken to remedy clinical or managerial errors of judgement may revolutionise some aspects of the Health Service. It is clear that the full benefits of such equipment cannot be enjoyed unless closer co-ordination is achieved between the individual units which make up the three sections of the Health Service and between the three sections themselves.

The General Practitioner

20. At the start of the National Health Service the most urgent priority appeared to be the rationalisation and re-organisation of the existing Hospital Service, but

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* Report of the Maternity Services Committee. H.M.S.O., 1959.

with this accomplished the urgent need to examine the position of the general practitioner has been recognised. Only a few comments will be made here. In 1954 the number of patients on doctors' lists in England and Wales was 42·44 m. and there were 18,513 unrestricted Principals to deal with them, while in 1964 there were 47·82 m. patients and 20,246 unrestricted Principals. The pattern of fewer general practitioners dealing with more patients, the burden of certification for employers as well as national insurance purposes and the problem of under-doctored areas has been much publicised. One of the greatest difficulties has arisen because the National Health Service, being based on the concept of independent family doctors, provides no means for operating any overall plan for the rational distribution of general practice in relation to the needs of areas in which they are situated and because of the professional isolation in which many general practitioners have existed, especially those with single-handed practices. The increasing tendency to group together which is now apparent seems bound to continue and the emphasis on home care which we have seen developing in many of the specialties must increase the need for general practitioners to work in closer co-operation with hospital staff and local health authorities which supply supporting home services for many of their patients. The increased employment of ancillary staff to ease the load of general practitioners and provide a better service to the patient is being fostered and will certainly become a much more prominent feature of group practice.

The Medical Officer of Health

21. Like the general practitioner, the medical officer of health faces a situation which has changed rapidly over the last 20 years. Increased attention has been paid to the patient in his social setting and as a member of a family group, and the scope and importance of the social services administered by the local authorities has markedly increased. The accent on home care and rehabilitation of the patient has been reflected here and the need for detailed medical concern with now well established activities promoting environmental hygiene has declined. The massive growth in active preventive medicine has extended to cover immunisation against whooping cough, tetanus, tuberculosis and poliomyelitis in addition to smallpox and diphtheria which were virtually the only forms of immunisation available on a large scale at the beginning of the period under review. Health screening for such conditions as cancer of the cervix is becoming established and the principle may well be extended.

General Conclusions

22. It is not claimed that this paper does more than take a general look at the main lines of advance which seem to have developed over the last two decades and the brief examination of a few of the specialties is far from comprehensive. However, it does seem that certain broad conclusions can be drawn about future trends and that these conclusions seem to be applicable to the majority of specialties and to the Health Service as a whole.

The Nature of Changes

23. The decline in importance of the acute bacterial infections due to effective control by chemotherapeutic agents has brought the degenerative disorders of middle-age and old age into greater prominence. At the same time advances in medical science have begun to supply a few at least of the solutions to some of the problems posed by those disorders. Emphasis has therefore swung from diagnosis of an established disease towards preventive medicine in its widest sense, no longer confined only to the control of infectious diseases, and concerned increasingly with the early detection of the start of disease at its pre-symptomatic stage. It has also raised the problem of the extent to which resources can be devoted to the prolongation of life.

24. The increasing complexity and cost of the sophisticated treatments now available in hospital and the high degree of specialisation which these have demanded means that adequate modern services can only be provided efficiently and economically in centralised units and the service of the future will increasingly be provided

from district general hospitals serving an area large enough to make the provision of the full range of specialties (except a very few which will be provided regionally) an economic or indeed a practical proposition. The need for an interdisciplinary approach to many clinical problems also favours the centralised grouping of specialist services and is opposed to the establishment of large units devoted to a single specialty.

25. The accent on home care and the early return of patients to the community emphasises the important role which the general practitioner must continue to play in the health services and the need for the growth of the "community approach" by hospital staffs and management and by local health and welfare authorities and general practitioners alike. Many of the functions which are at present undertaken by local health authorities almost as a separate arm of the Health Service are likely to be more effectively discharged if they are undertaken by the family doctor assisted by the staff of the local health authority working together as members of a domiciliary team. Doctors will need to show a real ability to work and to co-operate with other colleagues such as social workers and health visitors and will need to know how to organise effectively the community care which their patients require.

The Hospital Service

26. It appears that the hospital service will have to provide more highly specialised facilities and treatments for an increasing number of people. Increasingly patients will be admitted to or retained in hospital only when it is *absolutely* impossible to treat a patient under arrangements made through his general practitioner and local health authority. The service will rely increasingly on highly specialised team work in many fields of medicine and surgery and on the development of automated procedures where these can help solve problems of staff shortages. The accent on better and more effective use of staff will be of great importance.

27. Full medical care for a community is now and will be increasingly a balance of general and specialised medical care—using that term to include the work of other professions. While the specialised functions of hospitals in relation to in-patients are developed in this way, the length of time spent as an admitted patient will decline and early discharge, together with continued development of one-day wards, day hospital services and outpatient clinics will strengthen the links of the hospitals with the medicine being practised outside them. Many general practitioners are likely to assist in this side of hospital work and groups of general practitioners working together in community health centres will look to their district general hospital for the provision of diagnostic and laboratory services on an area basis. It will be necessary to provide in that hospital a medical centre which all doctors in the area whether in hospital or general practice, or in local authority service, will use. The continuing education provided at such a centre will have to be organised.

The Community Services

28. The general practitioner and local health services will be faced with the need to continue the day-to-day care of the sick population while extensively developing measures for the prevention and early detection of disease. This will need to be done in the face of quite severe staff shortages. The need to make the best possible use of all the scarce available trained staff must lead to changes in the way in which general practitioners carry out their work, and to the further development of group practice arrangements and methods which allow the greater employment of ancillary staff of various types. The increasing need for measures in preventive medicine in relation to the health of the community as a whole will mean closer and closer co-operation between local health authorities and general practice and the future role of the health centre as a base from which medical care can be made available and the social services deployed will be of increasing importance. In England and Wales local health authorities (in consultation with executive councils) are planning a substantial increase in the provision of health centres in the ten years to 1975/76.

29. The emphasis appearing throughout this short review on the development of home care and the community approach to the provision of medical care is seen as the main change in outlook which has occurred in the last 20 years.

Improved Information

30. The Health Service will have to make increasing use of better and more accurate information to plan its future requirements and in the medical field the fact that approximately 90 per cent of the valuable clinical information available in medical records is valueless except for the treatment of the individual patient to whom it refers, because it is irretrievable in its present form can no longer be accepted as satisfactory. The role of the computer and electronic data processing systems will become increasingly important and data which can be stored, retrieved and processed by such equipment will require the development of appropriate statistical and operational research facilities to ensure that it is used to the best advantage. The movement towards closer integration of the National Health Service will facilitate development on these lines.

APPENDIX 3

CRITERIA SUGGESTED BY THE GENERAL MEDICAL COUNCIL FOR THE APPROVAL OF PRE-REGISTRATION POSTS*

The Council suggests, for consideration by Universities and Medical Schools, that the following criteria for the approval of pre-registration posts should be generally adopted:

(*a*) Posts should be in general hospitals with adequate laboratories for clinical investigation, radiological departments, and a working library.

(*b*) Each pre-registration post should be in the charge of a chief, or chiefs, who should each have not less than four consultant sessions per week in the hospital and should be directly responsible for the training of the holders of pre-registration posts.

(*c*) The non-consultant staff of each hospital department providing pre-registration posts should include at least one Senior Registrar or, if not, one or more Registrars in residence.

(*d*) The responsibility of the holder of each pre-registration post should be limited to that number of beds which allows him adequate time for his further education, and sufficient free time. The number should normally not exceed 30 beds, some of which should be for acute cases.

(*e*) The educational nature of the post should be fully understood and accepted by all concerned, and the student should be allowed at least six hours weekly for educational purposes, apart from his free time. There should be an educational programme for holders of pre-registration posts, including case conferences, teaching seminars and meetings of a journal club.

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* Recommendations as to Basic Medical Education, para. 64. General Medical Council, 1967.

APPENDIX 4

HIGHER QUALIFICATIONS OF THE SPECIALIST PROFESSIONAL COLLEGES: PASS RATES IN RECENT EXAMINATIONS

TABLE 1

Entries and Pass Rates of all Colleges, 1964–66

	Primary Examination or Part I			*Final Examination or Part II*		
	No. of Entries	*No. Successful*	*% Successful*	*No. of Entries*	*No. Successful*	*% Successful*
Royal College of Physicians [M.R.C.P. (Lond.)]						
1964	Not applicable			1,749	275	16
1965	1,827	711	39	818	200*	24
1966	2,056	670	33	702	173*	25
Royal College of Surgeons of England [F.R.C.S. (Eng.)]						
1964	1,238	325	26	1,281	316	25
1965	1,265	342	27	1,372	342	25
1966	1,261	344	27	1,667	419	25
Royal College of Physicians of Edinburgh [M.R.C.P. (Edin.)]						
1964	Not applicable			1,412	238	17
1965	309	93	30	1,374	254	18
1966	1,024	686	67	728	161	22
Royal College of Surgeons of Edinburgh [F.R.C.S. (Edin.)]						
1964	226	72	32	1,048	319	30
1965	238	72	30	1,143	330	29
1966	249	97	39	1,226	392	32
Royal College of Physicians & Surgeons of Glasgow [M.R.C.P. (Glasg.)]						
1964	Not applicable			693	112	16
1965	Not applicable			740	125	17
1966	234	76	32	666	123	18
[F.R.C.S. (Glasg.)]						
1964	548	146	27	167	70	42
1965	449	123	27	112	41	37
1966	404	129	32	70	31	44
Royal College of Obstetricians & Gynaecologists [M.R.C.O.G.]						
1964	Not applicable			432	198	46
1965	Not applicable			366	162	44
1966	Not applicable			443	202	46

(continued)

TABLE 1 (*continued*)

	Primary Examination or Part I			*Final Examination or Part II*		
	No. of Entries	*No. Successful*	*% Successful*	*No. of Entries*	*No. Successful*	*% Successful*
College of Pathologists [M.C.Path.]						
1964	81	34	42	67	30	45
1965	220	91	41	112	55	49
1966	172	91	53	86	38	44

* Before 1965 Part II of the M.R.C.P. (London) Examination was the final examination but in 1965 a Part III was introduced to which borderline candidates in Part II are referred. In addition to the figures given for candidates successful in Part II, 88 (11%) of the entrants in 1965 and 86 (12%) of the entrants in 1966 were referred to Part III. In 1965 and 1966 just over half the entrants to Part III of the examination were successful.

TABLE 2

Entries and Pass Rates of all Candidates, and of Candidates with Specified Qualifications and Experience, in Certain Examinations

(a) *Royal College of Physicians, London: Membership Examination, October 1966 and January 1967*

	Part I	*Part II*	*Part III*
(1) Total number of entries	875	353	79
Total number successful	267	104	45
Pass rate	31%	29%*	57%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain, held registrable qualifications granted by British licensing bodies, and subsequently worked continuously (or almost so) in hospitals in Great Britain	407	204	50
Number successful	171	75	29
Pass rate	42%	37%†	58%
Number entering for first time‖	171	103	31
Number successful at first attempt‖	70	42	16
% successful at first attempt	41%	41%‡	52%
Number of those who were successful at first attempt who had also passed the previous part(s) of the examination at the first attempt	N.A.	32	8
(3) Number of entries of candidates included in (2) who held, or had held, a registrar appointment at a teaching hospital in Great Britain	114	62	12
Number successful	48	30	10
Pass rate	42%	48%§	83%
Number entering for first time‖	30	26	3
Number successful at first attempt‖	10	15	2
% successful at first attempt	33%	58%¶	67%
Number of those who were successful at first attempt who had also passed the previous part(s) of the examination at the first attempt	N.A.	8	1

* In addition 41 (12%) were referred to Part III.
† In addition 24 (12%) were referred to Part III.
‡ In addition 8 (8%) were referred to Part III.
§ In addition 1 (2%) was referred to Part III.
‖ Candidates entering for the first time may have previously entered a similar examination of another college.
¶ In addition 1 (4%) was referred to Part III.
N.A. Not applicable.

(b) *Royal College of Surgeons of England*

(i) *Primary London Examination, June and September, 1967*

	June 1967	*Sept. 1967*
(1) Total number of entries	365*‡	219†‡
Total number successful	109	65
Pass rate	30%	30%
(2) Number of entries of candidates who had their undergraduate medical education in the British Isles and held registrable qualifications granted by British (or Irish) licensing bodies, and at the time of taking the examination were working in the British Isles	162	83
Number successful	61	32
Pass rate	38%	39%
Number entering for first time at this college‡	82	26
Number successful at first attempt at this college‡	36	14
% successful at first attempt at this college	44%	54%

* 209 of these candidates were entering for the first time at this college

† 54 of these candidates were entering for the first time at this college.

‡ Candidates entering for the first time the Primary examination for the F.R.C.S. England may have previously entered the Primary F.R.C.S. examination of another surgical college.

(ii) *Final Fellowship Examination, November 1966 and May 1967*
(*General Surgery only*)

	November 1966	*May 1967*
(1) Total number of entries	789	541*†
Total number successful	191	150
Pass rate	24%	28%
(2) Number of entries of candidates who had their undergraduate medical education in the British Isles and held registrable qualifications granted by British (or Irish) licensing bodies, and had subsequently worked for at least two years in hospitals in the British Isles	268	199
Number successful	84	82
Pass rate	31%	41%
Number entering for first time at this college†	...	42
Number successful at first attempt at this college†	42	11
% successful at first attempt at this college	...	26%
Number of those who were successful at first attempt who had also passed the Primary F.R.C.S. examination at the first attempt at this college‡	30	5
(3) Number of entries of candidates included in (2) who were known to hold, or to have held, a registrar appointment at a teaching hospital	44	45
Number successful	12	18
Pass rate	27%	40%
Number entering for first time at this college†	...	...
Number successful at first attempt at this college†	9	2
% successful at first attempt at this college	...	...
Number of those who were successful at first attempt who had also passed the Primary F.R.C.S. examination at the first attempt at this college‡	8	—

* 108 of these candidates were entering for the first time at this college.

† Candidates entering for the first time the Final examination for the F.R.C.S. England may have previously entered for the Final F.R.C.S. examination of another surgical college.

‡ These candidates may have had unsuccessful attempts at the Primary examination of another surgical college.

... Information not available.

(c) *Royal College of Physicians of Edinburgh*

(i) *Part I of Membership Examination, March and June 1967*

	March	*June*
(1) Total number of entries	218	329
Total number successful	170	205
Pass rate	78%	62%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain and held registrable qualifications granted by British licensing bodies	67	105
Number successful	52	55
Pass rate	78%	52%
Number entering for first time*	47	77
Number successful at first attempt*	36	38
Percentage successful at first attempt	77%	49%

* Candidates entering for the first time may have previously entered a similar examination of another college.

(ii) *Part II of Membership Examination, April and July 1967*

	April	*July*
(1) Total number of entries	301	285
Total number successful	29	67
Pass rate	10%	24%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain and held registrable qualifications granted by British licensing bodies, and had subsequently worked continuously (or almost so) in hospitals in Great Britain	47	50
Number successful	7	20
Pass rate	15%	40%
Number entering for first time*	24	25
Number successful at first attempt*	5	13
% successful at first attempt	21%	52%
Number of those who were successful at first attempt who had also passed the previous part(s) of the examination at the first attempt	5	11
(3) Number of entries of candidates included in (2) who hold, or have held, a registrar appointment at a teaching hospital in Great Britain	32	36
Number successful	5	16
Pass rate	16%	44%
Number entering for first time*	14	19
Number successful at first attempt*	3	11
% successful at first attempt	21%	58%
Number of those who were successful at first attempt who had also passed the previous part(s) of the examination at the first attempt	3	10

* Candidates entering for the first time may have previously entered a similar examination of another college.

(d) *Royal College of Surgeons, Edinburgh*

(i) *Primary Fellowship Examination, 1967*

	Jan. 1967	*May 1967*	*Sept. 1967*
(1) Total number of entries	87	87	63
Total number successful	21	28	29
Pass rate	24%	32%	46%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain and held registrable qualifications granted by British licensing bodies, and had subsequently worked continuously (or almost so) in hospitals in Great Britain	35	36	27
Number successful	9	8	8
Pass rate	26%	22%	30%
Number entering for first time at this college*	...	...	...
Number successful at first attempt at this college*	4	5	5
% successful at first attempt at this college	...	...	...

* Candidates entering for the first time the Primary examination for the F.R.C.S. Edinburgh may have previously entered the Primary F.R.C.S. examination of another surgical college.

... Information not available.

(ii) *Final Fellowship Examination, 1967*

	Excluding Ophthalmology				*Ophthalmology*	
	Jan.	*March*	*July*	*Sept.*	*Jan.*	*June*
(1) Total number of entries	276	321	405	357	40	48
Total number successful	78	113	142	123	12	18
Pass rate	28%	35%	35%	34%	30%	38%
(2) Number of entries of candidates who held registrable qualifications granted by British licensing bodies, and who seemed subsequently to have worked continuously (or almost so) in hospitals in the U.K.	...	57	79	58	14	15
Number successful	...	30	41	31	9	9
Pass rate	...	53%	52%	53%	64%	60%
Number entering for first time at this college*	...	...	...	...	...	...
Number successful at first attempt at this college*	...	20	32	17	8	3
% successful at first attempt at this college	...	...	...	...	...	...
Number of those who were successful at first attempt who had also passed the primary F.R.C.S. examination at the first attempt at this college†	...	2	2	4	2	—
(3) Number of entries of candidates included in (2) who were known to hold, or have held, a registrar appointment at an approved hospital in the U.K.	...	24	44	34	13	13
Number successful	...	10	22	18	8	8
Pass rate	...	42%	50%	53%	62%	62%
Number entering for first time at this college*	...	...	...	...	...	...
Number successful at first attempt at this college*	...	7	19	9	8	3
% successful at first attempt at this college	...	...	...	...	...	...
Number of those who were successful at first attempt who had also passed the primary F.R.C.S. examination at the first attempt at this college†	...	2	—	—	2	—

* Candidates entering for the first time the Final examination for the F.R.C.S. Edinburgh may have previously entered for the Final F.R.C.S. examination of another surgical college.

† These candidates may have had unsuccessful attempts at the Primary examination of another surgical college.

... Information not available.

Appendix 4

(e) *Royal College of Physicians and Surgeons of Glasgow: Membership and Surgical Fellowship Examinations, 1966*

	Membership				*Surgical Fellowship Primary Examination*			*Surgical Fellowship Final Examination*		
			Part I	*Final or Part II*						
	Feb. 1966	*June 1966*	*Sept. 1966*	*Oct. 1966*	*Jan. 1966*	*May 1966*	*Oct. 1966*	*Feb. 1966*	*June 1966*	*Nov. 1966*
(1) Total number of entries	247	364	234	55	124	160	120	30	26	14
Total number successful	38	64	76	21	34	53	42	17	9	5
Pass rate	15%	18%	32%	38%	27%	33%	35%	57%	35%	36%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain and held registrable qualifications granted by British licensing bodies, and had subsequently worked continuously (or almost so) in hospitals in Great Britain	18	38	19	5	49*	83*	44*	6	2	—
Number successful	6	10	7	4	14	36	19	5	2	—
Pass rate	33%	26%	37%	80%	29%	43%	43%	83%	100%	—
Number entering for first time†	6	25	6	—	12	40	14	5	2	—
Number successful at first attempt†	2	4	1	—	5	20	6	4	2	—
% successful at first attempt	33%	16%	17%	—	42%	50%	43%	80%	100%	—
(3) Number of entries of candidates included in (2) who held, or had held, a registrar appointment at a teaching hospital in Great Britain	3	9	5	2	...	...	...	2	1	—
Number successful	1	2	3	2	...	...	...	2	1	—
Pass rate	33%	22%	60%	100%	...	...	...	100%	100%	—
Number entering for first time at this college†	3	8	—	—	...	...	...	2	1	—
Number successful at first attempt at this college†	1	1	—	—	...	...	...	2	1	—
% successful at first attempt	33%	13%	—	—	...	...	...	100%	100%	—

* Undergraduate medical education in Great Britain and holding registrable qualifications granted by British licensing bodies but details of work since qualification not known.

† Candidates entering for the first time may have previously entered a similar examination of another college.

... Information not available.

(f) *Royal College of Obstetricians and Gynaecologists: Membership Examination, July 1966 and January 1967*

	July 1966	*January 1967*
(1) Total number of entries	246	257
Total number successful	114	122
Pass rate	46%	47%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain and held registrable qualifications granted by British licensing bodies, and had subsequently worked continuously (or almost so) in hospitals in Great Britain	38	38
Number successful	23	25
Pass rate	61%	66%
Number entering for first time	30	34
Number successful at first attempt	20	20
% successful at first attempt	67%	59%
(3) Number of entries of candidates included in (2) who held, or had held, a registrar appointment at a teaching hospital in Great Britain	32	45
Number successful	15	28
Pass rate	47%	62%
Number entering for first time	22	35
Number successful at first attempt	15	22
% successful at first attempt	68%	63%

(g) *College of Pathologists: Membership Examinations, 1964–66*

	Primary				*Final*			
	Date	*Entries*	*Passes*	*Pass rate*	*Date*	*Entries*	*Passes*	*Pass rate*
(1) Total number of entries and passes, together with pass rates	Mch '64	81	34	42%	Oct '64	67	30	45%
	Mch '65	124	45	36%	June '65	79	43	54%
	Oct '65	96	46	48%	Nov '65	33	12	36%
	Feb '66	83	44	53%	Nov '66	86	38	44%
	Oct '66	89	47	53%				
	TOTAL	473	216	46%		265	123	46%
(2) Number of entries of candidates who had their undergraduate medical education in Great Britain and held registrable qualifications granted by British licensing bodies, and had subsequently worked continuously (or almost so) in hospitals in Great Britain	326				201			
Number successful	184				100			
Pass rate	56%				50%			
Number taking examination for first time	245				151			
Number successful at first attempt	140				77			
% successful at first attempt	57%				51%			
Number of those who were successful at first attempt who had also passed the Primary examination at the first attempt (including 50 who gained exemption)	Not applicable				70			
(3) Number of entries of candidates included in (2) who held, or had held, a registrar appointment at a teaching hospital in Great Britain	152				106			
Number successful	97				61			
Pass rate	64%				58%			
Number taking examination for first time	120				85			
Number successful at first attempt	78				48			
% successful at first attempt	65%				56%			
Number of those who were successful at first attempt who had also passed the Primary examination at the first attempt (including 23 who gained exemption)	Not applicable				36			

Appendix 4

TABLE 3

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ENTRIES AND PASS RATES IN PRIMARY FELLOWSHIP EXAMINATION, LONDON AND OVERSEAS, 1967

	Place of Examination				*Total*
	London			*Overseas (4 Centres)*	
	Feb.	*June*	*Sept.*		
Total number of entries	343	365	219	156	1,083
Total number successful	104	109	65	50	328
Pass rate	30%	30%	30%	32%	30%

TABLE 4

ROYAL COLLEGE OF SURGEONS OF ENGLAND: FINAL FELLOWSHIP EXAMINATION IN SURGICAL SPECIALTIES, NOVEMBER 1966 AND MAY 1967

	General Surgery		*Otolaryngology*		*Ophthalmology*		*Total*	
	Nov. 1966	*May 1967*	*Nov. 1966*	*May 1967*	*Nov. 1966*	*May 1967*	*Nov. 1966*	*May 1967*
Total number of entries	789	541	59	49	81	69	929	659
Total number successful	191	150	8	11	20	11	219	172
Pass rate	24%	28%	14%	22%	25%	16%	24%	26%

APPENDIX 5

GENERAL PROFESSIONAL TRAINING

Examples of Training Appointments in Certain Specialties, following the Intern Year

(See paragraph 113 on pages 58–59 of the Report)

(a) General Medicine*

1st Year:

Appointments in general medicine, to include experience in dealing with emergencies.

2nd and 3rd Years:

Either four six-month appointments selected from the following:†

General Medicine
Paediatrics
Psychiatry
Neurology
Dermatology
Community medicine
General practice
Haematology
Cardiology
Clinical pathology

Or one year spent in research in either a preclinical or a clinical department; and two six-month appointments selected from the above list.

(b) General Surgery

EXAMPLE A

1st Year:

General surgery (with at least three months in accident surgery).‡

2nd and 3rd Years:

Appointments of six months or a year selected from the following:

- Laboratory medicine
- General practice
- Research (not necessarily in a Department of Surgery)
- General pathology
- Special surgery—one of the following :
  - Casualty/Orthopaedics
  - Urology
  - Plastic surgery
  - Neurosurgery
  - Paediatric surgery
  - Otorhinolaryngology
  - Ophthalmology
  - Gynaecology

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*One of the three years might profitably be spent abroad in clinical training or research.

†This list is not exhaustive ; much will depend on local facilities and opportunities. For example, in many centres a Department of Respiratory Diseases, Industrial Medicine or Geriatric Medicine could offer an excellent six-month appointment.

‡During this time the trainee would pursue physiology, pathology and biochemistry as an integral part of clinical surgery but would at the same time begin to acquire experience and facility in the technical aspects of surgery.

EXAMPLE B

1st Year:

One year divided between at least two of the following:*

Casualty/Orthopaedics
Urology
Plastic surgery
Neurosurgery
Paediatric surgery
Othorhinolaryngology
Ophthalmology
Gynaecology

2nd and 3rd Years:

Appointments of six months or a year in general surgery† and in other subjects selected from the following:

Laboratory medicine
General practice
Research (not necessarily in a department of surgery)
General pathology

(c) Obstetrics and Gynaecology

1st Year:

Six months in obstetrics and six months in general surgery.

2nd and 3rd Years:

18 months in posts in obstetrics and gynaecology (either separately or combined), and a six-months' elective period, part of which should be devoted to study in the specialty and part to the study of additional subjects (e.g. pathology) or to research.

(d) General Practice

EXAMPLE A

1st Year:

Appointments of six months each as a trainee in general practice and in general medicine.

2nd and 3rd Years:

Appointments of six months in the following:

Obstetrics and gynaecology
Otorhinolaryngology
Paediatrics
Psychiatry

EXAMPLE B

1st Year:

Appointments of six months each in general medicine or in psychiatry and as a trainee in general practice.

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*The purpose of this year would be to give the trainee an opportunity to experience and learn the scope of a specialty in which he thinks he may develop a deeper interest.

† See the third footnote on p. 259.

2nd and 3rd Years:

Appointments of six months each in the following:

- Paediatrics
- Obstetrics and gynaecology
- Geriatrics and ophthalmology (concurrently)
- Dermatology and physical medicine (concurrently)

EXAMPLE C

1st Year:

Appointments of six months each in paediatrics and in obstetrics and gynaecology.

2nd Year:

A year as a trainee in general practice.

3rd Year:

Two appointments of six months each, chosen from the following, either separately or in two subjects concurrently:

- Anaesthetics
- Community medicine
- Dermatology
- General medicine
- Geriatrics
- Ophthalmology
- Otorhinolaryngology
- Psychiatry

(e) Psychiatry

EXAMPLE A

Six months as a trainee in general practice.

One year in a university professorial unit, treating short-term in-patients and out-patients; part-time instruction in neurology (six months) and in child psychiatry (six months).

One year in a psychiatric hospital, with experience of long-stay and short-stay in-patients and out-patients; part-time experience of mental subnormality and community services.

Six months in an appointment selected from the following:

- Acute psychiatric service (emergency ward, attempted suicide ward, or observation ward)
- Geriatric ward
- Alcoholism and drug dependency unit
- Mental subnormality service
- Child, or adolescent, or family psychiatry.

EXAMPLE B*

One year in a psychiatric hospital (short- and long-term patient care, and out-patients).

One year in a short-stay unit in a general hospital.

Six months in child or family psychiatry.

Six months in mental subnormality.

(Part-time experience and instruction as in EXAMPLE A above.)

(f) Community Medicine

1st Year:

Appointments in general medicine.

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*Might be taken by a trainee who wished to go on to specialise in either child psychiatry or subnormality.

2nd Year:

Two appointments of six months or one of a year in such subjects as:

Paediatrics
Psychiatry
Infectious diseases
Microbiology
Geriatrics
General practice

3rd Year:

Either a junior administrative appointment with one of the following:

A local health authority
A regional hospital board
A central government department
An industrial health service

Or one of the following:

A junior teaching appointment in a university department of community medicine
Research in a university department of community medicine or in a preclinical or clinical department
An appointment in a research and intelligence unit studying the provision of health services
An appointment overseas (academic, clinical or administrative)
A course for the Diploma in Public Health*

(g) Pathology

1st Year:

Appointments of six months or a year in a clinical specialty, e.g.

Metabolic disease
Infectious disease
Paediatrics
Neurology

2nd and 3rd Years:

Appointments in approved laboratories in at least two of the four major branches of pathology

(i) Morbid anatomy and histology
(ii) Medical microbiology
(iii) Chemical pathology
(iv) Haematology

During this period the trainee would study subjects such as biochemistry, genetics, molecular biology and statistics as these apply to the pathologist's work but at the same time would by apprenticeship training be introduced to the techniques of each discipline and the interpretative work of the departments in which he was working.

(h) Anaesthetics

1st Year:

Anaesthetics in a general surgical department (including anaesthetics for emergency surgery and for ophthalmic, dental and plastic surgery).

2nd Year:

Appointments of six months or a year selected from the following:

General medicine
Intensive respiratory care
Research in a university department of anaesthetics, physiology or pharmacology
Secondment to a centre abroad†
Electronics, as applied to medicine, in a university department of physics or an equivalent setting
Laboratory medicine
Attachment to a " Pain Clinic "

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*But see para. 139 on p. 68 of the Report.

†But see para. 151 on p. 71 of the Report.

3rd Year:

Appointments of three months in anaesthetics for each of the following:

Neurosurgery
Thoracic and open heart surgery
Obstetrics
Paediatrics (including neonates)

(i) Radiology and Radiotherapy

EXAMPLE A—*Diagnostic Radiology*

1st Year:

General clinical experience (preferably six months in general medicine and six months in general surgery).

2nd Year:

Appointments of six months each in diagnostic radiology combined with:

(i) Physics as applied to radiology and photography, and nuclear medicine (scanning)
(ii) Morbid anatomy and anatomy

3rd Year:

Six months in diagnostic radiology combined with anatomy or morbid anatomy; six months in one of the following:

Neurology
Paediatrics
Orthopaedic surgery
Respiratory diseases
Obstetrics
Nephrology
Cardiology
Research

EXAMPLE B—*Radiotherapy*

1st Year:

General clinical experience, preferably six months in medicine and six months in surgery; a six-month appointment in one of the following might be chosen as an alternative:

Otorhinolaryngology
Gynaecology
Neurology
Orthopaedic surgery
Respiratory diseases
Community medicine
Geriatrics

2nd and 3rd Years:

A six-month appointment in radiotherapy, combined with physics as applied to radiotherapy, followed by six-month appointments in three of the following:

Morbid anatomy and haematology
Radiobiology and nuclear medicine
Diagnostic radiology
One of the subjects listed under *1st Year*, or research in radiotherapy and radiobiology

APPENDIX 6

SPECIAL VOCATIONAL TRAINING FOR GENERAL PRACTICE

An Extract from Evidence submitted by the Royal College of General Practitioners in March 1966

The undergraduate medical curriculum, with the period of general vocational training, aims to produce the basic doctor who will require further training and experience for whatever branch of medicine he intends to enter. Entrants to general practice need a systematized course of special vocational training just as do doctors embarking on any other career in medicine. The College has recently published a report (*Reports from General Practice. I: Special Vocational Training for General Practice. College of General Practitioners, 1965*) setting out its views on this matter in some detail. The minimum period recommended for this training is four years after registration—two years spent in hospital appointments and two years in supervized general practice.

Whereas the preregistration year in hospital is spent in appointments which are as general as possible, the other two years should be spent in posts relevant to the work of general practice—obstetrics with gynaecology, paediatrics, psychiatry and geriatrics. The next most important subjects are dermatology, ophthalmology, ear nose and throat work, and physical medicine. Some of these might be taken as concurrent or rotating posts. Further experiments are required in the combining of posts of this type so as to provide experience of several special subjects in a limited time. In all the hospital years there is a need for supervision, active training and time for study.

The last hospital year can be especially valuable if it is placed after a year in practice when the young doctor has discovered his particular training needs and can choose posts to satisfy them.

The two years remaining of the period of training will be spent in general practice itself, with a gradually diminishing amount of supervision, but always with the opportunity of consultation with his teacher. The first year should be on the lines of the present trainee year which must be developed and improved especially in regard to the selection, training and supervision of the teachers. During this year the young doctor must be able and encouraged to undertake educational clinical assistantships in subjects in which he has not held house appointments. He should attend courses devised to introduce him to those subjects peculiar to general practice which are not covered in undergraduate training or experience. The College report on special vocational training contains a detailed list of these subjects in its appendix. A two-year introductory course takes place at Canterbury and a one-year course at Winchester-Southampton.

In the last period of general-practice training the young doctor will have sufficient confidence and experience to work independently but he will continue to require guidance from his principal. This is the most suitable time to see something of the other medical and social agencies with which the general practitioner works and to gain experience of the different kinds of special work carried out in practice. Several weeks should be spent working in the local Health Department. As in the first practice year, hospital clinical assistantships should be arranged to enlarge experience in those disciplines so far neglected or in those in which special interest has developed. Some may wish to use the last few months of this period of training to carry out research on general practice problems or to return to the study of one of the basic biological or social sciences.

Dominating themes in these two years will be practice organization, early and pre-symptomatic diagnosis, management of disease at home, the management of anxiety, depression and the many physical expressions of emotional disorder, the reactions of different types of people to disease, the doctor's own reactions to different types of people and inter-related illnesses in families. A useful summary of the content of general practice which should be covered in training is contained in a College statement (*Brit. med. J., 1962, 2, 1392*) quoted in World Health

Organisation Expert Committee Report No. 257 " Training of the physician for family practice ".

Within the broad limits of this four-year scheme which is offered as a basis for detailed planning, there is room for variation and experiment. The special vocational training needs of general practice will change as the role of the general practitioner changes; the content and duration of training will need to be constantly under review. The urgent needs at present are (i) to make a start in developing an organization in every region for this type of early postgraduate training; this College with its faculties is ready and anxious to play a leading part (ii) to provide financial and other incentives to ensure that adequate training is not confined to a small number of enthusiasts.

APPENDIX 7

POSTGRADUATE TRAINING FOR PATHOLOGISTS

An Extract from Evidence submitted by the College of Pathologists in February 1966

The training programme. The College recommends division of the training period into two parts: a period of general training, followed by a period of special training. Prior to commencing work in the laboratories at least 1 year should be spent in general clinical hospital work or in an appropriate specialty such as infectious diseases, metabolic diseases, neurology, etc. . . .

The period of general training in the laboratory must be at least 2 years, and experience must be gained in not less than two of the major branches of pathology. After this general training period trainees should spend not less than 3 years in one, or mainly one, major branch of pathology—morbid anatomy and histopathology, microbiology, chemical pathology, or haematology.

These training periods should be spent in adequately staffed departments with suitable training facilities and the College is engaged in putting into effect a scheme for the recognition of such laboratories. Ultimately it is intended that only those who have trained in such recognised laboratories should be admitted to the examinations of the College.

Membership examination. The examination for Membership of the College is in two parts. At the first part (Primary Examination), which is taken towards the end of the period of general training, candidates are examined in two of the major branches of pathology.

The Final Examination is taken in one branch towards the end of the period of specialized training—after at least 5 years in pathology—and is designed to ascertain that the candidate has attained a high degree of professional skill in his chosen field. It is appreciated that most members will require further experience before appointment to a post of consultant status.

APPENDIX 8

EXAMPLES OF POSSIBLE CURRICULA FOR A FIRST DEGREE COURSE IN MEDICAL SCIENCE

1. The suggested curricula given below are merely a few examples of how the Commission's thinking on the general principles of the undergraduate preclinical course, as outlined in Chapter 4 of the Report, might be implemented; each university would of course determine the exact form of its own curriculum. The order in which subjects are taken can be varied considerably: the examples given were chosen because they seem to provide a logical sequence of work, particularly for the medical student. Students intending to enter paramedical professions would be required to take subjects other than clinical method and general pathology, and would presumably choose options different from those chosen by medical students.

2. Anatomy does not appear separately in the list of compulsory subjects but would be taught, in the amount required and in the appropriate sequence, in association with physiology. There is, moreover, opportunity to study anatomy in greater detail as one of the " limited alternatives " and for some special aspect of anatomy (e.g. neuro-anatomy, or electron-microscopy) to be taken as an optional subject. Optional subjects would be chosen either to remedy deficiencies in the student's basic science background (see Chapter 5 of the Report), e.g. in physics or chemistry (such options would probably be taken early in the first year) or to explore a field which had a particular appeal for him.

3. For our present purposes we assume that the general structure of a university's requirements will be as follows:

COMPULSORY SUBJECTS

	No. of Units Required*
55 units, as follows:	
Cell Biology (CB) Structure, genetics, microbiology, etc.	9
Man and his Environment (ME) Epidemiology, evolution genetics, statistics, etc.	5
Anatomy and Physiology (AP)	13
Biochemistry (including metabolism) (BC)	9
Behavioural Sciences (BS) Psychology and Sociology	5
General Pathology and Pharmacology (PP)	7
Introduction to Clinical Method (CM)	7

LIMITED ALTERNATIVES

9 units in subjects chosen from the following list, not more than one from each group:

(*a*) Further Biochemistry
Further Physiology
Further Anatomy

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* A unit is assumed to imply roughly the equivalent of one-ninth of a term's full-time work ; this corresponds to one half-day a week if organised teaching is assumed to take place on 4½ days in the week. Three years' full-time work would, on this basis, provide a total of 81 units.

(*b*) Experimental Pharmacology
Experimental Pathology
Experimental Biology

(*c*) Genetics
Statistics

(*d*) Further Psychology
Further Sociology

OPTIONAL SUBJECTS

17 units in at least 2 subjects chosen from a wide range of possibilities, including for example the following:

Biophysics
Chemistry (intermediate or advanced)
Clinical practice in a university teaching hospital*
Clinical Science (e.g. clinical pharmacology or physiology, metabolic diseases, pathology)
Community Health
Computer Science
Mathematics (intermediate or advanced)
A Modern Language
Physics (intermediate or advanced)
Principles of Electronics
Social Anthropology

4. On the basis of requirements such as the foregoing, outline curricula such as the following could be constructed (the unit values are shown in brackets):

Example A

	First Year	
Term 1	*Term 2*	*Term 3*
CB (3) BC (3) Intermediate Chemistry (3)	CB (3) BC (3) BS (3)	CB (3) BS (2) AP (4)
	Second Year	
AP (3) ME (3) PP (3)	AP (3) ME (2) PP (4)	AP (3) BC (3) Social Anthropology (3)
	Third Year	
Biophysics (3) French (3) Advanced Chemistry (3)	CM (4) French (2) Further Physiology (3)	Further Physiology (6) CM (3)
	Fourth and Fifth Years	
	Clinical Work	

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* See para. 233 on page 99 of the Report.

Example B

	First Year	
Term 1	*Term 2*	*Term 3*
CB (3)	CB (3)	CB (3)
ME (3)	ME (2)	BS (2)
Intermediate Physics (3)	BS (3)	AP (4)
	Electronics (1)	
	Second Year	
AP (3)	AP (3)	AP (3)
BC (3)	BC (3)	BC (3)
Advanced Maths (3)	Computer Science (3)	Computer Science (3)
	Third Year	
PP (3)	PP (4)	Experimental Pharmacology (4)
Community Health (3)	Statistics (1)	Further Biochemistry (2)
Statistics (3)	CM (4)	CM (3)
	Fourth and Fifth Years	
	Clinical Work	

Example C

	First Year	
	As in **Example A** above	
	Second Year	
Term 1	*Term 2*	*Term 3*
AP (3)	AP (3)	AP (3)
ME (3)	ME (2)	BC (3)
PP (3)	CM (4)	CM (3)
	Third Year	
	Clinical Work	
	Fourth Year	
Advanced Chemistry (3)	Clinical Pharmacology (2)	Clinical Pharmacology (3)
Clinical Pharmacology (3)	Further Physiology (3)	Further Physiology (6)
Clinical Medicine (3)	PP (4)	
	Fifth Year	
	Clinical Work	

APPENDIX 9

STATISTICAL TABLES RELATED TO UNDERGRADUATE MEDICAL EDUCATION IN GREAT BRITAIN

TABLE 1

UNDERGRADUATE STUDENTS AT UNIVERSITIES IN GREAT BRITAIN WITH MEDICAL SCHOOLS, ACADEMIC YEAR 1964–1965

Number of full-time students reading for first degrees or first diplomas at each university

University	*A* *All Subjects*	*B* *Medical*	*C* *Col. B as Percentage of Col. A*
Birmingham	4,069	500	12·3
Bristol	3,617	357	9·9
Cambridge	7,712	501	6·5
Leeds	5,436	432	8·0
Liverpool	4,280	539	12·6
London	17,679	4,683*	26·5
Manchester	4,979	531	10·7
Newcastle	3,910	447	11·4
Oxford	7,267	355	4·9
Sheffield	3,481	357	10·3
Wales	7,482	338	4·5
Aberdeen	2,967	528	17·8
Edinburgh	6,417	900	14·0
Glasgow	6,227	1,047	16·8
St. Andrews	3,171	453	14·3
TOTAL	88,694	11,968	13·5

* Includes 113 Oxford and 409 Cambridge medical students taking clinical courses in London medical schools.

Source: University Grants Committee.

TABLE 2

STUDENT INTAKE OF MEDICAL SCHOOLS IN GREAT BRITAIN, ACADEMIC YEARS 1960–68

Numbers of students who began preclinical courses during each academic year

Academic Year	*Normal Residence of Students*						*Total*		
	Great Britain			*Overseas*					
	Men	*Women*	*Total*	*Men*	*Women*	*Total*	*Men*	*Women*	*Total*
1960–61	1,329	459	1,788	199	33	232	1,528	492	2,020
1961–62	1,384	512	1,896	188	19	207	1,572	531	2,103
1962–63	1,525	510	2,035	144	13	157	1,669	523	2,192
1963–64	1,638	528	2,166	101	14	115	1,739	542	2,281
1964–65	1,735	522	2,257	136	14	150	1,871	536	2,407
1965–66	1,797	515	2,312	140	26	166	1,937	541	2,478
1966–67	1,834	557	2,391	99	12	111	1,933	569	2,502
1967–68*	1,828	603	2,431	101	12	113	1,929	615	2,544

* Provisional figures.

Source: University Grants Committee.

TABLE 3

OUTPUT OF MEDICAL SCHOOLS IN GREAT BRITAIN, ACADEMIC YEARS 1960–67

Numbers of students who obtained a first registrable medical degree or diploma during each academic year

Academic Year	*Normal Residence of Students*						*Total*		
	Great Britain			*Overseas*					
	Men	*Women*	*Total*	*Men*	*Women*	*Total*	*Men*	*Women*	*Total*
1960–61	1,259	431	1,690	138	16	154	1,397	447	1,844
1961–62	1,210	421	1,631	132	13	145	1,342	434	1,776
1962–63	1,211	432	1,643	173	28	201	1,384	460	1,844
1963–64	1,130	381	1,511	192	28	220	1,322	409	1,731
1964–65	1,173	445	1,618	159	28	187	1,332	473	1,805
1965–66	1,293	457	1,750	165	24	189	1,458	481	1,939
1966–67	1,356	454	1,810	107	16	123	1,463	470	1,933

Source: University Grants Committee.

TABLE 4

NUMBER OF STUDENTS FROM MEDICAL SCHOOLS IN GREAT BRITAIN WHO OBTAINED REGISTRABLE PRIMARY QUALIFICATIONS, ACADEMIC YEARS 1962–65

*Location of Medical School.**	*Students obtaining a registrable qualification†*									*Students not obtaining a registrable qualification‡*		
	Total			*Obtaining a non-university qualification only*								
				Total			*Had been admitted to clinical course on result of a non-university examination*					
	1962–63	1963–64	1964–65	1962–63	1963–64	1964–65	1962–63	1963–64	1964–65	1962–63	1963–64	1964–65
London	865	769	827	30	42	42	16	17	20	3	3	3
England and Wales, other than London	553	555	582	35	57	28	21	14	5	2	1	7
Scotland	383	379	399	—	1	—	—	—	—	—	—	—
Total, Great Britain	1,801	1,703	1,808	65	100	70	37	31	25	5	4	10

* School at which the student's clinical course was taken ; Oxford and Cambridge students who took their clinical course at medical schools in London are included in the figures for the latter.

† Students who in the year specified obtained for the first time a registrable primary medical qualification after completing the undergraduate clinical course. The figures are not identical with those shown for the same years in Table 3, which were derived from returns made earlier to the University Grants Committee.

‡ Students who completed the clinical course in the year specified but, as far as was known to the medical school at which they did so, did not hold a registrable medical qualification in June 1967. (As the numbers were so small, no further enquiry was made.)

Source: Replies by medical schools to an enquiry by the Royal Commission in June, 1967.

TABLE 5

STUDENTS WHO OBTAINED THE CONJOINT DIPLOMA (L.R.C.P., M.R.C.S.), CALENDAR YEARS 1961–65

Location of Medical School	*Students obtaining Conjoint Diploma*				
	1961	*1962*	*1963*	*1964*	*1965*
London	474	503	489	454	524
England and Wales, other than London	70	66	80	92	58
Scotland	1	—	—	1	1
Total, Great Britain	545	569	569	547	583
Ireland	5	8	6	9	9
Elsewhere	37	33	10	16	13
Total, all countries	587	610	585	572	605

Source: Conjoint Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England.

TABLE 6

PERCENTAGE OF STUDENTS AT MEDICAL SCHOOLS IN GREAT BRITAIN WHO PASSED THE FINAL MEDICAL DEGREE EXAMINATION AT THE FIRST ATTEMPT, ACADEMIC YEARS 1962–65

Medical School	*Percentage of students* who passed final degree examination at first attempt*		
	1962–63	*1963–64*	*1964–65*
Birmingham	80	87	93
Bristol	83	81	75
Leeds	88	82	77
Liverpool	85	88	93
London			
Charing Cross Hospital	78	76	77
Guy's Hospital	71	70	61
King's College Hospital	67	85	63
London Hospital	76	81	77
Middlesex Hospital	73	76	72
Royal Free Hospital	86	69	85
St. Bartholomew's Hospital	78	75	69
St. George's Hospital	75	75	80
St. Mary's Hospital	83	69	67
St. Thomas's Hospital	75	77	73
University College Hospital	60	71	68
Westminster	83	77	77
Manchester	73	69	79
Newcastle upon Tyne	83	86	82
Oxford	100	80	81
Sheffield	89	95	89
Wales	83	89	83
Aberdeen	91	85	89
Edinburgh	93	93	95
Glasgow	83	88	85
St. Andrews	82	77	84

* Students completing the medical degree course in the academic year specified.

Source: Replies by medical schools to an enquiry by the Royal Commission in June, 1967.

Appendix 9

TABLE 7

WOMEN MEDICAL STUDENTS IN GREAT BRITAIN, ACADEMIC YEARS 1963–68

Number and Percentage of Women in the Preclinical Intake of each Medical School (excluding overseas students)

Medical School	1963–64		1964–65		1965–66		1966–67		1967–68*	
	No. of Women Admitted	*% of Intake*	*No. of Women Admitted*	*% of Intake*	*No. of Women Admitted*	*% of Intake*	*No. of Women Admitted*	*% of Intake*	*No. of Women Admitted*	*% of Intake*
Birmingham	21	*22·6*	27	*26·5*	19	*17·6*	30	*25·2*	34	*29·1*
Bristol	16	*25·4*	13	*20·0*	16	*25·0*	24	*25·8*	30	*26·1*
Cambridge	15	*8·5*	22	*18·3*	27	*14·4*	28	*15·3*	26	*14·1*
Leeds	15	*25·4*	24	*33·8*	18	*24·7*	23	*34·8*	26	*33·8*
Liverpool	35	*28·5*	28	*25·2*	31	*27·1*	25	*22·1*	28	*25·0*
London:										
King's College	23	*18·5*	24	*21·1*	19	*15·2*	25	*20·0*	25	*19·7*
Univ. College	15	*15·6*	15	*19·2*	18	*21·9*	20	*21·7*	19	*20·9*
Charing X Hosp.	12	*26·7*	9	*20·9*	11	*25·0*	11	*23·9*	12	*25·0*
Guy's Hospital	15	*17·2*	12	*11·7*	12	*13·3*	23	*24·0*	18	*17·3*
London Hosp.	9	*12·2*	14	*17·9*	9	*11·5*	9	*11·3*	11	*13·9*
Middlesex Hosp.	17	*25·0*	19	*25·3*	15	*19·2*	12	*14·8*	15	*18·8*
Royal Free Hosp.†	47	*61·0*	40	*51·9*	43	*48·3*	45	*49·5*	43	*48·9*
St. Bartholomew's Hospital	18	*18·4*	10	*8·8*	16	*14·9*	14	*12·8*	15	*16·0*
St. Mary's Hosp.	20	*29·0*	16	*25·4*	13	*19·7*	12	*18·8*	16	*23·2*
St. Thomas's Hospital	11	*21·2*	13	*20·3*	7	*12·5*	14	*23·7*	16	*26·7*
Manchester	26	*28·6*	29	*27·6*	27	*26·5*	27	*26·0*	25	*26·0*
Newcastle	21	*24·4*	21	*25·0*	25	*29·8*	25	*28·4*	31	*34·4*
Oxford	14	*19·7*	17	*19·8*	20	*18·2*	18	*19·4*	21	*21·0*
Sheffield	28	*37·8*	26	*34·7*	25	*35·2*	24	*32·0*	20	*25·3*
Wales	20	*30·3*	17	*25·4*	10	*14·5*	8	*11·8*	10	*15·2*
Aberdeen	26	*28·6*	25	*29·1*	32	*34·4*	31	*32·0*	40	*39·2*
Edinburgh	30	*20·5*	30	*20·0*	35	*24·0*	38	*23·3*	44	*27·3*
Glasgow	50	*30·7*	46	*26·7*	49	*25·8*	51	*25·9*	55	*27·2*
St. Andrews }	24	*32·9*	25	*28·1*	18	*20·9*	10	*22·2*	10	*20·8*
Dundee }							10	*22·7*	13	*31·0*
Total, Great Britain	528	*24·4*	522	*23·1*	515	*22·3*	550	*23·3*	603	*24·8*

* Provisional figures
† In 1961–62 59 students (90·8%) admitted to the preclinical course were women.
Source: University Grants Committee.

TABLE 8

LOCATION OF UNDERGRADUATE MEDICAL SCHOOLS ATTENDED BY GENERAL PRACTITIONERS AND CONSULTANTS

Sample of General Practitioners and Consultonts in Practice in England and Wales (at 30th September 1965)

	Location of Undergraduate Medical School				*All Locations*
	London	*England and Wales other than London*	*Scotland*	*Outside Great Britain*	
General Practitioners	619	491	287	330	1,727
Consultants	344	170	110	77	701
Total in sample	963	661	397	407	2,428
Percentage who were Consultants	*36*	*26*	*28*	*19*	*29*

Source: Last, J. M., *Brit. med. J.*, 1967, **2**, 796–799.

TABLE 9

*WHOLE-TIME UNIVERSITY CLINICAL TEACHERS AND CONSULTANTS ENGAGED IN UNDERGRADUATE CLINICAL TEACHING**

(at 30th September, 1966)

Location of University	*Whole-time University Clinical Teachers†*	*Consultants engaged in clinical teaching‡*		*Total Cols. A, B and C*	*Cols. A as Percentage of Col. D*
	A	*B*	*C*	*D*	*E*
London	120	37	652	809	*15*
England and Wales, other than London	167	44	507	718	*23*
Scotland	132	152	237	521	*25*
Total, Great Britain	419	233	1,396	2,048	*20*

* Excluding teachers of paraclinical subjects.

† Professors, Readers and Senior Lecturers. The numbers were arrived at by deducting, from university returns of medically qualified whole-time staff engaged in undergraduate clinical teaching, the estimated number engaged in teaching general pathology, biochemistry, haematology, morbid anatomy and bacteriology, and in research and administration.

‡ As listed in university and medical school returns. Those in Col. B held whole-time appointments in the undergraduate teaching hospital groups associated with the medical schools concerned; those in Col. C held part-time appointments in these groups.

Source: Ministry of Health.

TABLE 10

UNDERGRADUATE CLINICAL STUDENTS AND WHOLE-TIME UNIVERSITY CLINICAL TEACHERS, 1966

Location of University	*Clinical Students**	*Whole-time University Clinical Teachers†*	*Col. A divided by Col. B*
	A	*B*	*C*
London	2,895	120	24
England and Wales, other than London	2,114	167	13
Scotland	1,678	132	13
Total, Great Britain	6,687	419	16

* Academic year 1966–67.

† At 30th September 1966. See footnote † above.

Source: University Grants Committee and Ministry of Health.

Appendix 9

TABLE 11

WEEKLY SESSIONS SERVED IN TEACHING HOSPITAL GROUPS BY PART-TIME CONSULTANT STAFF ENGAGED IN UNDERGRADUATE CLINICAL TEACHING (*at 30th September, 1966*)

Location of University	*Number of part-time Consultants concerned**	*Total number of sessions served*	*Mean number of sessions served*	*Percentage of Consultants serving 5 sessions or less*
London	652	3,571	5·5	*55*
England and Wales, other than London	507	2,990	5·9	*43*
Scotland	237	1,876	7·9	*8*

* See footnote ‡ to Table 9 above.

Source: Ministry of Health and Scottish Regional Hospital Boards

TABLE 12

NUMBER OF HOSPITAL AUTHORITIES SERVED BY PART-TIME CONSULTANT STAFF ENGAGED IN UNDERGRADUATE CLINICAL TEACHING (*at 30th September, 1966*)

Location of University	*Number of part-time Consultants who served:*					*Mean number of authorities served*	*Percentage of Consultants concerned who served 3 or more authorities*
	1 authorities	*2 authorities*	*3 authorities*	*4 authorities*	*5 authorities*		
London	214	317	98	19	4	1·9	*19*
England and Wales, other than London	130	369	8	—	—	1·8	*2*
Scotland	114	102	18	2	1	1·6	*9*

Source: Ministry of Health and Scottish Regional Hospital Boards

TABLE 13

NUMBER OF CHAIRS IN CERTAIN SUBJECTS AT EACH UNDERGRADUATE MEDICAL SCHOOL IN GREAT BRITAIN

(at 30th September, 1967)

Medical School	Pathology/Morbid Anatomy	Bacteriology/Microbiology/Immunology/Virology	Chemical Pathology/Clinical Biochemistry/Clinical Chemistry	Obstetrics/Gynaecology	Pharmacology/Therapeutics/Materia Medica	Haematology	Psychiatry/Psychological Medicine/Mental Health	Child Health/Paediatrics	Forensic Medicine	Radiology/Radiodiagnosis/Radiotherapy/Nuclear Medicine	Social Medicine/Public Health/Epidemiology and Preventive Medicine/Industrial Health	Anaesthetics	Neurology/Neurosurgery/Neuropathology	Ophthalmology	Dermatology	Orthopaedics/Orthopaedic Surgery	Tropical Medicine/Tropical Hygiene	Others
Aberdeen	1	1	1	1	1		1	1			1							
Birmingham	3	1		1			1	1			1	1	1					
Bristol	1	1		1	1		1	1			1	1						
Dundee	1	1		1	1		1	1			1					1		
Edinburgh	1		1	1	2		1	1		1	1		1	1	1	1		2(2)
Glasgow	3	3	1	2	1		1	1	1		1	1	1	1		1		3(3)
Leeds	1	1	1	1	1		1	1	1	1	1	1						1(4)
Liverpool	1	1		1	2		1	1			1	1				1	2	
Manchester	1	1		1	1		1	1			2		1	1				2(5)
Newcastle	2	1	1	1	1		1	1			1	1	1		1			
Oxford	1			1	1							1				1		
Sheffield	1	1		1	1		1	1			1							
Wales (W.N.S.M.)	1	1	1	1			1	1		1	1	1						1(6)
London																		
Charing Cross	1	1	1(1)	1	1													
Guy's	2	2	1		2			1	1									
K.C.H.		1	1	1		1												
The London	1	1					1		1			1						
Middlesex	2				2		1			2								
Royal Free	1		1	1	1													
St. Bartholomew's	1	2			1	1	1											
St. George's	1	1	1				1		1									
St. Mary's	1	2	1	1	1	1		1										
St. Thomas's	1	1	1	1	1	1												
U.C.H.	1	1	1(1)	1	1	1												
Westminster	1	1	1															

(1) Experimental Pathology (2) Respiratory Diseases, General Practice
(3) Infectious Diseases, Medical Cardiology, Geriatric Medicine (4) Cancer Research
(5) Rheumatology, Audiology (6) Tuberculosis.
Source: Returns made by universities and medical schools to the Ministry of Health.

APPENDIX 10

SPECIMEN SYLLABUS IN PSYCHOLOGY FOR MEDICAL STUDENTS

Learned and Unlearned Behaviour

Unlearned behaviour in animals and man; simple learning and conditioning; social learning.

Thinking and Intelligence

Learning and problem-solving; concepts; development of conceptual thinking in children; language and thinking; features of adult problem-solving; measurement of intelligence; influences on intelligence; extent and consequence of individual differences.

Perception

Attention and perception; simple perceptual organisation; selection and interpretation in perception; influences of experience and of emotional and cognitive factors on perception; observer error.

Memory

Phases of memory; short-term storage; memory and perception, thinking, etc.; forgetting; testimony and recall of events; memory and ageing.

Motivation and Emotion

Approaches to motivation; emotional development; influence of early experience; maternal deprivation and children in hospital; family and social influences on motivation, and on behaviour.

Personality

Nature of personality structure and dynamics; dimensional, psychoanalytic and constitutional theories of personality; measurement of personality.

Attitudes

Nature of attitudes and beliefs, including prejudice; group influences on attitudes; attitude change; doctor-patient expectations and attitudes.

Interpersonal Behaviour

Experimental analysis of social interaction; studies of the interview situation; behaviour in formal and informal groups; group norms and roles; leadership in formal and informal groups; communication, morale.

APPENDIX 11

SPECIMEN SYLLABUS IN SOCIAL FACTORS RELATED TO MEDICINE

Introduction

The social history of medicine and medical care (this would not be an antiquarian's course; it would begin with the 20th century and illuminate historical cause and effect). The impact of scientific, technological and social factors on the role of the doctor and the social functions of medicine. The evolution of medical services in response to social pressures and the changing nature of disease. Patterns of medical care organisation, the scope of medical specialties, and changing concepts of health and disease. The ethics of medicine, seen professionally and in the context of social change.

Sociological Concepts

A general introduction to some of the basic concepts of sociology, their development and applicability to contemporary socio-medical issues. Links would be established here between sociological analysis and social medicine as an academic discipline, particularly because of the latter's emphasis on the approach to medical problems by epidemiological methods and its interest in the analysis of the medical needs of society.*

Demographic Trends

Changes in the structure and composition of the population; the analysis of mortality, fertility, marriage, divorce, ethnic and other factors. The significance of an ageing population, changes in family size and in the working population. Population control and family planning.

The Family

The role and functions of the family, treated comparatively and culturally; the effects of industrialisation and urbanisation; characteristic forms of the family; role behaviour in sickness, and the response of the family to illness and handicap in one of its members. The social problems of old age and the "generation gap".

Social Stratification

Class, status and prestige; social mobility; the occupational system and its professionalisation, occupational and social stratification in relation to morbidity, mortality and the use of medical care. Ethnic and cultural aspects of stratification. Problems of social distance between professional people and their patients or clients.

Social Pathology

Deviance and conformity in society; sociological, philosophical and legal aspects of delinquency and crime; institutional neurosis, suicide, drug addiction and alcoholism. Group behaviour and the role of the doctor and others concerned in the prevention and treatment of behaviour disorders.

Social Medicine and the Community

Trends in community structure and community patterns of disease; social, cultural, ethnic and economic influences; the epidemiology of the major diseases confronting medicine to-day; the relationship between occupation, housing, leisure and other environmental factors and physical and mental health; lay attitudes to health and sickness, prevention of illness and medical care; the study of vulnerable and high-risk groups; the roles of the medical, nursing, paramedical and social work professions.

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* See Report on Departments of Social and Preventive Medicine. Royal College of Physicians, London, 1966.

Health and Social Services and the Study of Social Administration

The structure, organisation and functioning of health and related social services. The changing functions of the hospital. The economics of medical care. Individual and community responsibility. The causes and relief of poverty, deprivation and handicap. Levels of living in childhood, working life and old age. The responsibilities of the professions, ancillary and auxiliary workers, and the services concerned with disturbed personal relationships, social maladjustment, and physical and mental handicap. The problems of cooperation, coordination and continuity of care in medical and social diagnosis, prevention, treatment, and the effective use of services. The ascertainment and deployment of community resources. Problems of confidentiality in the linkage of services and in relationships between health and welfare workers. The role of research in identifying the medical needs of society and in evaluating the " quality " and " effectiveness " of medical care.

APPENDIX 12

MEDICAL MANPOWER

*Interim Memorandum addressed by the Royal Commission to the Secretary of State for Education and Science, 15th June, 1966**

INTRODUCTION

1. Manpower needs and the required output of doctors from British medical schools are not specifically mentioned in the Commission's terms of reference, but we are to consider among other things what changes may be needed in the number of medical schools in Great Britain, and in any case the scale of provision required is a fundamental factor to be taken into account in considering the form and pattern of medical education. The Commission's initial enquiries have led to a firm conviction that a substantial increase of output is required without delay; although long-term action must await full consideration of major policy issues, some interim action is possible and is urgently recommended.

BACKGROUND

2. In 1944, when the population of Great Britain was 47·5 million (compared with 53·5 million today), the Interdepartmental Committee on Medical Schools (the Goodenough Committee) suggested for British medical schools a total intake of about 2,500 students a year in the future. Taking account of wastage during training, and allowing for foreign students who return to their own countries after finishing their training, this would probably have resulted in an annual output of about 2,100 newly-qualified British doctors. In 1957, however, a Committee appointed by the Health Departments (the Willink Committee) advised a temporary reduction to avoid a surplus of doctors which they thought possible, and subsequently the number of British medical students fell off until in 1964 only 1,500 completed their training. By then substantial shortages of doctors had appeared in some areas, particularly in the hospital service and in general practice. In the past few years these shortages have caused public and professional concern, which has increased as substantial losses by emigration during the last ten years or so have become known.

ASSESSMENT OF THE SITUATION

3. By short-term measures designed to make more intensive use of their main existing facilities, the medical schools have increased their intake in the past few years to a present figure of 2,283 students of British origin. The Government recently decided to provide in the next two years the means of further short-term expansion at some schools, and extensions at certain other schools will, we understand, be approved as funds become available in the following two years. We understand that these measures represent, in the view of the University Grants Committee, the most that can be done to expand quickly the capacity of the existing medical schools; the Committee have told us that they see no practical possibility of making more intensive use of the facilities already available or of using more extensively the facilities of other faculties to supplement those of the medical schools. A new medical school is to be built at Nottingham; we understand it is hoped that building will start within the next two years. Disregarding students from overseas who are likely to return to their own countries after training, the annual intake of the schools should thus rise to about 2,700, giving an output of about 2,400 by 1975 (when the population will probably be about 57·5 million).

4. With the help of the Ministry of Health and the Scottish Home and Health Department, we have made an initial estimate of the numbers of doctors required

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* See paragraph 323 on page 130 of the Report.

to make good the losses caused by death, retirement, overseas service and emigration; to provide for the needs of an increasing population; and to bring the numbers in general practice and the hospital service up to the minimal reasonable standard within a moderate period of time. In the light of the detailed assessments set out in the annex* to this memorandum, we reckon that a deficit of at least 10,000 doctors will have accumulated by the end of the next ten years. To meet this over a similar period, taking account of wastage during training, an increase of at least 1,100 would be required, *on average*, in the annual intake of students at present envisaged for the next ten years. To this must be added whatever provision this country may wish to make for increasing the number of places in British medical schools available to overseas students: our view, after consulting the Ministry of Overseas Development, is that this figure, which has been reduced to about 150 in recent years, should at least be restored to its former level of 200.

5. Our estimates include an allowance for some increase in the number of British doctors temporarily serving in developing countries overseas, and for the loss of several hundred doctors a year by permanent emigration to other advanced countries. Although emigration is one of the most difficult factors to estimate and predict, we are satisfied that in the light of all the available evidence our estimate reflects reasonably accurately the experience of this country in recent years; and that, in view of the continuing demands of other countries, it is a realistic forecast of minimum future losses. We have taken account of the likely effects of the improved terms of medical service in this country now being discussed between the Government and the profession, but we are concerned about the increasingly systematic attempts by other countries to attract doctors from Britain. Their efforts could well lead to an increase in emigration, especially if a worsening shortage of doctors in this country leads to further dissatisfaction in the profession: Britain is, in our view, in danger of being caught in a vicious circle unless the shortage is remedied.

6. It is possible that more doctors have come from overseas and settled permanently in this country than has been previously reckoned. Some of these doctors have come from Ireland and the more advanced countries of the Commonwealth, and this movement will no doubt continue. Many of them, however, have come from countries whose needs are far greater than ours; it might be unrealistic to rely on a continuing substantial contribution to the country's manpower needs from this source. We recognise, of course, that hospital service is, and always has been, an important feature of the training of young doctors, and that this country has a continuing duty to provide postgraduate training for substantial numbers of doctors from overseas; but we think that the present excessive reliance on the services provided by young doctors from overseas is bad for them and for their countries, and is tending to distort the staffing pattern of British hospitals. (We shall be dealing with this problem in more detail in our final report.)

7. We intend to look further at a number of questions on which we think there is considerable uncertainty, and to consider the country's requirements for doctors in the longer term. We see no likelihood, however, that our further studies will lead us to envisage any lower requirement than we have found initially; our estimates have been based on minimum needs and include, for example, no allowance for the rising standard of medical service which is invariably demanded as living standards generally are improved, or for the effects of further advances in medical science. We shall be considering very carefully the effects of increasing the effectiveness of the country's existing stock of doctors, particularly by employing married women practitioners as fully as possible and by making the fullest use of ancillary staff. Our initial studies suggest, however, that any improvements in these fields will do no more than offset increasing demands for medical service which we have so far excluded from our calculations.

CONCLUSION

8. Our initial broad review of the manpower situation thus leads us to the inescapable conclusion that this country faces a serious shortage of doctors now and in

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* See pp. 284–288.

the years to come; even the earliest action to improve the situation could not take practical effect for a number of years, by which time a substantial further deficit will have accumulated. Moreover, our calculations take no account of the qualitative consequences of leaving the situation as it is: the advances in medical care that will have to be forgone, the widening disparity between professional ideals and public expectations on the one hand and the actualities of medical practice on the other, and above all the disheartening increase in frustration and overwork. All these are bound to add to the already considerable pressures towards emigration, and to the general air of pessimism which is perhaps the greatest obstacle in the way of improving the effectiveness with which Britain's limited medical resources can be deployed. We think we should justifiably be criticised if we did not bring these conclusions to the notice of the Government at this stage in our work, and urgently recommend action to lessen the problem.

POSSIBLE COURSES OF ACTION

9. There are three main ways in which the output of doctors in this country could be substantially increased: by setting up new medical schools or else (which for immediate practical purposes amounts to the same thing) by drastically remodelling and expanding existing schools; by emergency arrangements which combined the potentialities of suitable University science departments, not now associated with medical education, with the facilities of hospitals not now engaged in teaching; or by further marginal additions to the present medical schools which would enable them to use their facilities even more intensively than they do already, especially at the preclinical stage.

10. The first two of these alternatives involve major decisions on policy and organisation on which we cannot yet offer considered views. Nevertheless, bearing in mind the very long time it could take for any specific arrangements to be made, we think that some further exploratory steps could be taken without seriously prejudicing our freedom to review all the possibilities of medical school development and, in our final report, to recommend those which we think the best after the fullest examination. When we were appointed the Prime Minister assured Parliament that our work would not stand in the way of urgent action in this field; we should be glad to play our part in harmonising immediate requirements with long-term developments, by making our provisional advice available to the authorities concerned as action proceeds.

11. Meanwhile, it seems to us imperative that the maximum use should be made of the facilities of established medical schools, in so far as further expansion can be achieved quickly without any major departure from the present pattern. We wish to acknowledge the efforts made by the University Grants Committee in investigating the possibilities of short-term expansion, and express our appreciation of the generous share of their limited resources which they have recently made available to medical education. We do not think, however, that the programme resulting from the Committee's recent review should be taken as exhausting the possibilities of immediate useful action. In making this review, the Committee and the universities concerned had necessarily to bear in mind the needs of other subjects because medical schools were competing for a share of a limited total allocation of money for university building and consequential running expenditure; we think that, were additional funds to be made available specifically for expanding the preclinical facilities of medical schools, some projects could be accelerated and new possibilities of fruitful action would be disclosed that could not have been put forward in earlier circumstances. In our view, the national interest requires that these possibilities should be urgently investigated and exploited. A corresponding expansion of clinical teaching facilities is likely to present no serious difficulties, although it must be recognised that some expenditure will be required in this connection also.

RECOMMENDATIONS

12. We recommend:

(1) that specifically designated additional funds, both capital and recurrent, should be made available to enable the earliest advantage to be taken of all worth-while possibilities of short-term expansion at established medical schools;

(2) that with the assurance that such additional funds would be available the University Grants Committee, in cooperation with the Health Departments, should accelerate to the greatest practicable extent the implementation of those schemes of short-term expansion at existing medical schools which it has found to be feasible, and should conduct an urgent review of the possibilities of further quick expansion;

(3) that the University Grants Committee and the Health Departments should, in consultation with the Commission, continue to investigate the concrete possibilities of using the potentialities of additional institutions temporarily to augment the resources of medical education and to define the most promising proposals for the establishment of new permanent medical schools.

ANNEX

MEDICAL MANPOWER ESTIMATES, 1966–75

Introduction

1. This annex considers the immediate need for medical practitioners, in relation to the expected supply. It is convenient to think of the balance in terms of the ten-year period 1966–75, though it should be emphasised that this period is chosen quite arbitrarily. The aim is to provide a broad assessment, and not to specify the exact requirements that could be calculated from detailed projections of the component elements according to present and predicted trends. Much of the statistical information which would form the basis for such a procedure is lacking; even if it were available, an attempt to be over-precise could be misleading since several of the factors in the calculation will depend on future decisions rather than follow from events already past. The present preliminary estimates are deliberately conservative, in the sense that allowance is made only for medical manpower needs which have been clearly established. It could be strongly argued that in several respects the requirements have been under-stated.

Balance of Supply and Requirements

2. A balance sheet showing the supply and requirement of medical practitioners in Britain for the period 1966–75 is shown in the table below. Since a considerable part of the demand is due to the need to alleviate present shortages, as well as to the development of current needs over the period, figures related to individual years would not be meaningful; annual figures averaged over the period are therefore given. At the foot of the table a forecast is given of the deficit of doctors which will exist by 1975 unless there are large changes in present trends and policies.

Assessment of Medical Manpower, 1966–75
(average annual numbers)

A. *Requirements to provide adequate medical services*

Wastage from death and retirement	1,350	
Net permanent emigration to developed countries ...	300	
General Practice	500	
Hospital Service	830	
Service in under-developed territories	130	
Needs of other fields of practice	210	
Total		3,320

B. *Supply*

British medical schools	2,070	
Immigration*	250	
Total		2,320
Deficit per year		1,000
Deficit in ten-year period		10,000

Graduations from British Medical Schools

3. Estimates of the students normally resident in Britain who will graduate from medical schools in England, Wales and Scotland in the next ten years are given in the following table:

Year	*Graduates*	*Year*	*Graduates*
1966	1,710	1971	2,090
1967	1,830	1972	2,160
1968	1,940	1973	2,200
1969	2,030	1974	2,260
1970	2,060	1975	2,410
1966–70	9,570	1971–75	11,120

4. The basis of these calculations is the number of students who entered medical schools in 1961–65 and the number of places at present planned for 1966–70 (including the increase resulting from the revised building programme announced by the Government in January, 1966). It is assumed that the length of the medical course will remain five years and that 10% of the students will fail to qualify. That the wastage has been at this level in recent years is firmly established by studies carried out by the University Grants Committee and others; although constant efforts are being made in the medical schools to reduce the failure rate, with the increased pressure of larger numbers of students there is no reason to believe that it will fall significantly in the next ten years.

Requirements: Population Changes

5. The basis of estimation for each of the requirements will be described briefly. A major element in several is the projected increase of the population of Britain by 1975. The latest forecasts published by the Registrars General of England and Wales and of Scotland suggest that the rate of increase will average about 0·8% a year, or nearly three times the official estimate used by the Willink Committee. The projections imply that there will be a small rise in the proportion of the population over 65 years but a fall in the 45–54 age group. The effect of the varying age distribution on the demand for medical care is estimated to be slight but, if anything, will lead to an increase as the chronic diseases of the old form an increasing share of health problems. The calculation of total numbers is sensitive to the estimates of future birth rates which are particularly difficult to predict. An error would, however, leave the number of older persons in the population unchanged and have only a relatively small effect on the demand for medical services. In drawing up the manpower balance sheet it has therefore been taken that the need for medical services will vary directly with the projected total population size.

Wastage from Death and Retirement

6. To calculate losses from death and retirement an estimate of the sex and age distribution of the stock of British civilian doctors in June 1965 was made. Death rates were taken to be the same as used by the Government Actuary in his most recent projections of the population of England and Wales. The assumptions about the future proportions of men and women doctors working in each age group adopted for the Willink Committee forecasts were slightly modified as a result of further evidence. The resulting estimate is about 100 a year higher than the corresponding figure calculated by the Government Actuary for the Willink Committee, mainly

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* On the assumptions discussed in para. 14 below.

because the stock of young doctors will be larger than was allowed for previously. Although the loss of young doctors by death is negligible, an appreciable wastage occurs because, at any given time, a proportion of the women are not practising.

Emigration

7. Emigration to developed countries (United States, Canada, Australia, New Zealand, etc.) is different in nature and significance from overseas service in the poorer territories and the two components are, therefore, treated separately. Since satisfactory complete and direct statistics of the emigration of medical practitioners are not available, investigation has to be made by other means, including the examination of changes in the stock of doctors and of the immigration records of the receiving countries. The most specific evidence on this subject comes from the valuable study by Abel-Smith and Gales* of a 5% sample of the doctors registering on the " home " list of the General Medical Council in 1925–59. From this study it can be calculated that in 1957–61 about 270 doctors born and trained in Britain emigrated each year to the developed countries, and that only a small proportion of these had any intention of returning. Additions have to be made for losses of doctors resident (but not born) and trained in Britain, and of medical practitioners qualifying abroad (e.g., in Ireland) who had been working in Britain sufficiently long to be regarded as part of the permanent stock. It is assumed that the estimate of net emigration thus arrived at will continue throughout 1966–75. Although recent trends cannot be accurately examined there is no evidence that the rate of loss has fallen. With the increasing numbers of medical graduates and the intensified demand for more doctors in the developed countries, linked in some cases to measures to ease immigration, it is likely to require vigorous efforts on the part of this country to restrict the net loss to 300 per year.

General Practice

8. The number of general practitioners within the National Health Service (excluding assistants and trainees) reached a maximum of about 23,700 in 1962–63; the lowest ratio of population to principals in general practice (2,180:1) was in 1961. Between 1963 and 1965 there was a fall in numbers of about 400, resulting in a change in the ratio to 2,280:1. Moreover, the total of assistants and trainees has been decreasing steadily for many years and is now, at less than a thousand, about 1,300 below that of 1956. These trends are certainly not due to a reduced need for general practitioners or for assistant and training posts. On the contrary, it has been widely accepted that lists of patients in some practices and parts of the country are too high. It is difficult, however, to establish a firm level of " need ". Conditions in practices vary widely for geographical, environmental and social reasons as well as by the extent of ancillary help. There has been little operational research which could serve as a guide.

9. If it is assumed that the ratio of the population to principals in general practice in 1961 provides a reasonable guide to what it should be in 1975, the total in the latter year would be rather more than 26,500, an increase of about 3,250 over 1965. Furthermore, it is desirable that doctors should serve a reasonable training period as assistants before becoming principals. To restore by 1975 the relationship current in 1953–55 between the number of assistants and trainees and the number of principals will require a total of about 2,700 in the former grades, i.e. an increase of some 1,700 over the present numbers. (Given this increase, and making some allowance for those who remain permanently as assistants, the average period of training in general practice before a doctor becomes a principal would be no more than about two years.) Thus, solely to restore the former position as regards numbers and training, an increase of 5,000 (or 500 a year, on average) will be needed in general practice between 1965 and 1975. If this aim is achieved and there is some improvement in the distribution of practice sizes, it should be possible to ensure that the maximum patient lists of principals should not, except in special circumstances, be greater than 2,500 (2,000 in rural areas). It has been suggested by the Ministry of Health and the Scottish Home and Health Department that upper limits

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* ABEL-SMITH, B., and GALES, K., British Doctors at Home and Abroad. Codicote Press, 1964.

of this order are desirable, and these levels are consistent with other evidence submitted to the Commission.

Hospital Service

10. The estimate of needs in the hospital service can be dealt with briefly since it is based on the studies of the Joint Working Party on Medical Staffing Structure in the Hospital Service (the Platt Committee) which reported in 1961, and of the Wright Committee which considered the implications of these studies for Scotland. From detailed reviews subsequently made by regional hospital boards the demand for additional doctors to meet minimum needs from 1963 to 1968 has been assessed by the Health Departments at about 5,850. In the period 1963–65 the actual increase was 1,150, leaving 4,700 still to be found ; an appreciable part of the increase was due to doctors from overseas filling junior posts. Even when the remainder of these needs are met, the areas of some regional boards would still be very substantially understaffed in relation to the norm ; a further 1,500 doctors would be required to raise their staffing standards to levels comparable with those over the rest of the country. The resulting total estimate of 6,200 doctors required by 1968 includes only a small allowance for population increase, since it was prepared before the latest projections were made. When allowance is made for population growth up to 1975, the needs over the ten-year period are estimated at 8,300, or 830 a year on average. No account has been taken in these calculations of possible increases between 1968 and 1975 in the demand for medical care associated with a rising standard of living and expectation.

Service in Developing Countries

11. Movements of British doctors abroad to work in under-developed territories differ in important respects from emigration to wealthy countries. In particular, the former is desirable and should be encouraged. Periods of service are frequently only a few years, sometimes on secondment from a home base. It seems likely that arrangements of this kind will become more and more common. Although the number of doctors who serve in such overseas posts at some stage in their career will be substantial the loss of manpower at any one time will be much less. The most convenient way to approach the problem of manpower estimates is to regard the doctors in under-developed territories as an extension of the British home stock : movements back and forward will not change the extended total. From the Abel-Smith and Gales survey (after adjustments for doctors registering before 1925, for retirements and for British-trained students who were resident but not born in this country) it appears that about 1,800 British medical practitioners were serving in under-developed territories in 1962. The evidence is that the numbers have since been falling ; a reasonable estimate for 1965 is 1,500. To replace wastage from death and retirement, about 30 doctors a year will be required, on average, in the next ten years ; the numbers are relatively modest because of the relative youth of doctors serving overseas. The Ministry of Overseas Development reports a heavy demand for British doctors to fill posts in under-developed territories. It estimates that, were the recruits available, the present number of about 500–550 in the service of Commonwealth Governments would be at least doubled. Needs for a further 200 British teachers in overseas medical schools can also be deduced from the present level of recruitment for such posts and (for the major requirement in Africa) from the Report of the 1962 Tananarive Conference on " The Development of Higher Education in Africa ". At present it is not easy to arrive at a firm assessment of demands for medical service of other kinds, e.g. research, industrial health, missionary services, family planning ; but an addition of 200 doctors in this respect, making the total increase required over the next ten years about 1,000, seems modest. The estimated number for expansion, to be added to the 30 for replacement is, therefore, 100 a year on average.

Other Medical Services in Britain

12. Rather more than one-fifth of the medical practitioners in Britain are employed outside general practice and the hospital services. If an increase in proportion to population is assumed, the additional doctors required would be more than one hundred a year. Evidence from the Ministry of Health and the Scottish Home and Health Department, relating to a group of these other services (local authorities,

Medical Research Council, universities, armed forces, prison, industries and administration) gives a total need of 210 a year. The estimates have not been examined critically in detail but in the final assessment it is likely that the entry for universities will have to be raised. There are also additional forms of medical service for which no figures have been entered. One of the most important of these is family planning clinics, which are expected to employ a considerably larger number of doctors in the next ten years, although mainly on a part-time basis. Until a more thorough investigation of the items in the " other " group has been made, however, a cautious estimate of 210 is retained.

Reservations

13. The basis of the calculated supply of graduates from British medical schools has been given in paragraph 4 above. It is assumed that the total number will be occupied in offsetting the estimated needs. A more refined computation would take into account the losses due to employment in non-medical occupations and to the lower average period of medical service in the working life of women doctors.

Immigration

14. The estimation of the contribution to the supply which will be made by immigration of a reasonably permanent nature raises special difficulties. The Willink Committee accepted that there would be an inflow of 120 doctors a year from Ireland and 80 from other overseas sources ; the majority of the latter group would come from the older Commonwealth countries. The data from the Abel-Smith and Gales survey show that the figure for Ireland was roughly correct. The figure of 80 " others " was approximately true for the period in the late forties on which the authors' estimates were based ; but more than 150 doctors a year from overseas (excluding Ireland) who were entered on the British Medical Register in 1950–54 were still in this country in September 1964, and the corresponding number for 1955–59 was 300 a year. The period of stay of these doctors has now been sufficiently long for them to be regarded as at least semi-permanent immigrants contributing substantial man-years of service. Although reliable statistics of country of origin cannot be given, it is clear that most of the increase is due to entrants from the less developed Commonwealth countries. The evidence suggests that if posts in Britain can be obtained this movement will continue on a substantial scale unless strong measures are taken to prevent it. It is not desirable, however, that medical demands in Britain should be met by permanent or semi-permanent immigration from poorer countries whose own needs are enormous. The figure of 250 a year entered in the medical manpower balance sheet in paragraph 2 is, therefore, an assessment of the extent to which overseas sources might reasonably be depended on to supply British needs ; it is assumed that most of these immigrants would be from Ireland and the older Commonwealth countries.

15. In October 1964 almost 50% of the junior doctors in the hospital service (excluding House Officers, many of whom are in their pre-registration year) had been born outside Britain, most of them in poorer countries. In the past few years numbers from overseas have been rising by over 300 per year while the total of British-born has also been rising, but only slowly. Many of the overseas doctors will return to their own countries after a period of valuable training. These provisions for training and experience are desirable and should be supported. As indicated above, however, there is an increasing tendency for the stay to be extended well beyond the training period. No close assessment has yet been made of a satisfactory level for the number of overseas doctors working in Britain for relatively short periods. It is assumed in these estimates that no contribution to the need for more medical services in Britain should be made by further rises in these numbers.

APPENDIX 13

LONG-TERM ESTIMATES OF MEDICAL MANPOWER REQUIREMENTS IN GREAT BRITAIN: DETAILED TABLES

TABLE 1

RELATIVE MEDICAL CARE REQUIREMENTS AT DIFFERENT AGES

<table>
<tr><th rowspan="2"><i>Age (years)</i></th><th colspan="2"><i>Relative Requirements per Person*</i></th></tr>
<tr><th><i>On basis of Swedish cost indices</i></th><th><i>On basis of modified indices used by the Commission</i></th></tr>
<tr><td>Under 10</td><td>0·4</td><td rowspan="3">0·6</td></tr>
<tr><td>10–29</td><td>0·5</td></tr>
<tr><td>30–39</td><td>0·6</td></tr>
<tr><td>40–49</td><td colspan="2">0·8</td></tr>
<tr><td>50–59</td><td colspan="2">1·2</td></tr>
<tr><td>60–69</td><td colspan="2">1·6</td></tr>
<tr><td>70–79</td><td colspan="2">2·0</td></tr>
<tr><td>80 and over</td><td colspan="2">2·4</td></tr>
</table>

* See paragraph 341 on page 138 of the Report.

TABLE 2

RELATIVE NEED FOR DOCTORS IN GREAT BRITAIN IN DIFFERENT YEARS, 1965–95

(*Taking Account of Population Age-structure and Relative Medical Care Requirements of Different Age-groups—see Table 1 above*)

Year	*Relative Need for Doctors (1975 = 100·0)*
1965	99·6
1975	100·0
1980	99·4
1985	98·8
1990	97·5
1995	96·3

TABLE 3

ESTIMATED TOTAL NUMBER OF DOCTORS AND NUMBER ECONOMICALLY ACTIVE IN GREAT BRITAIN, MID-1965, BY AGE-GROUPS*

Age (years)	*Total Number*		*Number Active*		*% Active*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*
Under 30	6,700	1,690	6,630	1,350	*99*	*80*
30–34	7,570	1,920	7,490	1,540	*99*	*80*
35–39	7,280	2,090	7,210	1,670	*99*	*80*
40–44	7,640	2,070	7,560	1,660	*99*	*80*
45–49	6,920	1,320	6,850	1,120	*99*	*85*
50–54	5,870	970	5,810	820	*99*	*85*
55–59	4,440	790	4,400	590	*99*	*75*
60–64	3,830	950	3,370	570	*88*	*60*
65–69	3,560	1,060	2,310	430	*65*	*40*
70–74	1,780	460	750	110	*42*	*24*
75 and over	2,010	340	420	40	*21*	*12*
Total	57,600	13,660	52,800	9,900	*92*	*72*

* As defined in Census Reports.

TABLE 4

PERCENTAGES OF ALL DOCTORS IN GREAT BRITAIN ESTIMATED TO BE ECONOMICALLY ACTIVE, 1965–90, BY AGE-GROUPS

Age (years)	*Percentage Economically Active*											
	Men						*Women*					
	1965	1970	1975	1980	1985	1990	1965	1970	1975	1980	1985	1990
Under 45	99						80					
45–54	99						85					
55–59	99						75					
60–64	88	86	85	83	82	80	60	59	58	57	56	55
65–69	65	59	53	47	41	35	40	37	34	31	28	25
70–74	42	38	33	29	24	20	24	22	20	18	16	14
75 and over	21	19	17	14	12	10	12	11	10	9	8	7

TABLE 5

ESTIMATED LOSSES BY DEATH AND RETIREMENT, 1965–95, OF DOCTORS ECONOMICALLY ACTIVE IN GREAT BRITAIN IN 1965

Period (*mid-year to mid-year*)	*Estimated Loss*
1965–70	6,140
1970–75	6,630
1975–80	7,400
1980–85	8,330
1985–90	9,100
1990–95	8,260
1965–95	45,860

APPENDIX 14

THE ORIGIN AND DEVELOPMENT OF THE UNIVERSITY OF LONDON

with particular reference to medical education

By Professor F. G. Young

(*a*) *The Foundation of the University of London*

1. The University of London originated in the institution advocated in 1825 and founded in 1826 which is now known as University College London. The founders wished to provide an institution of higher education where the shortcomings of Oxford and Cambridge would be avoided, where religious unorthodoxy would be no bar to entry or graduation, and where a reformed medical course might be established. A site had been acquired in Gower Street, London in 1825, and the new institution opened its doors in 1828, offering higher education free of religious tests, a non-resident system that was much cheaper than that in force at Oxford and Cambridge, teaching organised upon professorial lines after the pattern in Germany and in Scotland, and a wide curriculum with an emphasis on the study of those sciences " the knowledge of which is not profitable to the possessor in a pecuniary point of view, but which exert a great influence on the well-being of society " (*Report of University College London 1835*). Examples of such sciences included " an accurate comprehension of the phenomena of the human mind—of the instruments by which knowledge is acquired and accumulated—of the science of government—of the principles on which laws should be made and justice administered—of the rules which govern the creation and the distribution of wealth ". Aims such as these appeared to many to be most worthy of support but the intention of the new institution to undertake and develop medical education in London aroused opposition in the medical schools of the capital.

(*b*) *Medical Schools in London*

2. The medieval Hospitals in London named after St. Bartholomew and St. Thomas could regard themselves as having provided for many generations some form of instruction for medical students. As can be seen from Table 1 (p. 293), the establishment of organised medical schools in these Hospitals probably dates from the early eighteenth century. The date of foundation of a medical school can be hard to fix since the education of medical students often originated in the permission given to members of the honorary clinical staff of a hospital to introduce pupils or apprentices to " walk " the hospital with them, as they went round the wards to attend to their patients. The pupil was likely to have previously been apprenticed to an apothecary, and in the early days of medical education in London would have been studying anatomy at a private school which was independent of the hospital. As time went on the hospitals began to take formal notice of the pupils, registering them and providing dissecting rooms and other classrooms. Such accommodation gradually became the buildings of the medical school. The formal administration of the medical school probably began with committees of the hospital staff, who found advantage in a pooling of the teaching work, and of the fees, in place of the personal apprenticeships. The chief clinical services in the hospital were provided by visiting physicians and surgeons who earned their living by private practice outside the hospital. Even after the medical school had come to be sufficiently recognised for the accommodation it needed to be provided by the hospital, the general expenses of the school were met from the pooled fees of the students, any balance being distributed as dividend among the clinical teachers. The teachers were more like partners in an industrial or professional firm than salaried staff.

3. The stated dates of foundation of the existing undergraduate teaching hospitals in London, and those of the associated medical schools, are given in Table 1 below. The increase in the number of hospitals in London in the eighteenth century, at a time when the population was beginning to rise rapidly, naturally led to a greater interest in medical education in the metropolis. Five medical schools appeared within a few years after the foundation of University College and its medical school; since then only two more have been instituted apart from the short-lived West London Hospital Medical School (see annex, pages 303–305).

4. In earlier years the hospital physician or surgeon could expect to teach the whole of the medical curriculum himself. But as, during the first half of last century, the subjects that we now call premedical and preclinical ones developed and the need for teaching in them was recognised in medical schools, tuition in such matters passed beyond the scope of the hospital staff, who were forced to employ others both to deliver the lectures and later to arrange and supervise practical classes. From such beginnings the medical schools of today slowly took shape.

TABLE 1

DATES OF FOUNDATION OF THE LONDON UNDERGRADUATE MEDICAL SCHOOLS AND THE MAIN ASSOCIATED HOSPITALS*

	Date of Foundation of Medical School	*Date of Foundation of Main Associated Hospital*
St. Thomas's Hospital	?1723	1173
St. Bartholomew's Hospital	?1726	1123
Guy's Hospital	1769	1726
London Hospital	1785	1740
University College Hospital	1828	1834
King's College Hospital	1831	1839
St. George's Hospital	1831	1733
Charing Cross Hospital	1834	1818
Westminster Hospital	1834	1716
Middlesex Hospital	1835	1745
St. Mary's Hospital	1854	1851
Royal Free Hospital	1874	1828

* The history of the former medical school at the West London Hospital is given in the annex on pages 303–305.

5. As Professor H. Hale Bellot has written in his interesting account of the history of the University of London (*Victoria History of the County of Middlesex* Vol. I, to be published probably in 1968),† when the University was founded " London had already won for herself a predominant position in medical education. Her Hospitals were well known and in them generations of young men had walked the wards as apprentices, dressers or, simply, students, while in the eighteenth century, changes in the scientific approach to medical problems and the wider opportunities for dissection allowed by changes in the law led to the growth of Medical Schools, some of them attached to Hospitals but many of them private ventures. The diplomas granted by the Royal College of Physicians and the Royal College of Surgeons, each of them originally a local London institution, were highly

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† The writer is grateful to Professor H. Hale Bellot, Emeritus Professor of American History, University of London, and to Mr. R. B. Pugh, Editor since 1949 of the *Victoria History of the Counties of England*, for allowing him to consult and use unpublished material by Professor Bellot.

prized and the influence of the Royal Colleges extended throughout the kingdom, while a third London institution, the Society of Apothecaries, had succeeded in making its membership mandatory upon all who would practise as apothecaries in England and Wales. In the teaching of medicine, therefore, any University in London would come face to face with established institutions whose standing in the medical profession none could gainsay."

(*c*) *Medical Degrees in the New University*

6. Before it could be secure in the position it claimed, the new University of London had to become incorporated, with the power to grant degrees; but attempts to achieve this authority repeatedly failed, so at first it was able to offer only Certificates of Proficiency. Nevertheless it insisted that a power to grant degrees was essential for its success, particularly if it were effectively to contribute to medical education. But every step continued to be frustrated by those who saw danger in this new experiment in higher education, especially in the intended dissociation of religion and university instruction.

7. In the meantime a Royal Charter of Incorporation was granted, in August 1829, to the newly founded King's College London, which was established by a group of supporters of the Government, under the leadership of the Duke of Wellington, as " A College in which instruction in the doctrines and duties of Christianity as taught by the Church of England should be for ever combined with other branches of useful education ". This College was opened on 8 October 1831 on a site in the Strand presented by the Government. A fresh petition for a Charter for the University of London was defeated as the result of the intervention of the Universities of Oxford and Cambridge and the opposition of the London Medical Schools. Until 1834 the new institution in Gower Street had no hospital of its own, and even after that date its hospital was very young and relatively small. As the London *Medical Gazette* argued at the time, if a successful student from such a new institution became entitled to call himself a graduate there might as well be " Masters of Medicine and Surgery in the University of St. Bartholomew's" .

8. A sequel to this attempted intrusion into medical education in London was beneficial in a way probably not planned by the founders of the new institution. As can be seen from Table 1, to the early 1830's can be dated the foundation of King's College Hospital Medical School (1831), St. George's Hospital Medical School (1831), Charing Cross Hospital Medical School (1834) and Westminster Medical School (1834), while Middlesex Hospital Medical School followed in 1835. Charing Cross Hospital and its medical school were founded as complementary parts of a single institution. The hospital was opened early in 1818, and the medical school in 1834, these being the constituent parts of an institution "where practical information may be conjoined with scientific instruction". A second unexpected sequel was a move by the medical profession in the capital city to review the state of medical education. In 1833 a petition was presented to Parliament by a group of nearly fifty licentiates of the Royal College of Physicians, a group which included the Heads of most of the Medical Schools in London, requesting an enquiry into medical education. There is little doubt that the Royal Colleges were anxious to maintain their control over medical education in London through their close links with the medical schools. The students at the London medical schools followed courses of study in preparation for the examinations of the Conjoint Board of the Royal Colleges and these courses were regulated by the Royal Colleges themselves. The Royal Colleges were in a position to refuse to admit to their examinations students from a medical school of which they did not approve, and since many of the members of the clinical staffs of these schools were members of the Councils of the Royal Colleges the hold of those Colleges over the medical schools could be most effective.

(*d*) *The Chartered University*

9. In 1836 the problems which had arisen from the desire of the founders of the University of London to incorporate as a degree-giving body were solved, at least partially and temporarily, by the adoption of a compromise. A proposal was made by the Government, which was accepted, for not only the recognition of the new

institution in Gower Street but recognition " extending to all other duly qualified Colleges for education equal facilities for obtaining degrees including those in medicine ". The proposals were embodied in a Royal Charter under the terms of which the institution hitherto known as London University became incorporated under the name of University College London, and on 28 November 1836 the Great Seal was fixed not only to this Royal Charter but also to a second one which recognised a number of eminent men, whose names were recorded therein, to be " one body Politic and Corporate by the name of the University of London ". This new Corporate body was given the power to grant degrees in Arts, Laws and Medicine, after examination, to candidates who should present certificates of having completed approved courses of instruction at University College, King's College and such other institutions as might subsequently be approved for this purpose by the Crown.

10. The University of London thus established was an examining body appointed by the Crown, without teaching duties. It was controlled by the Home Office and was obliged to render an account of its expenditure to the Treasury. Until the income from fees became sufficient, the current costs of the new institution were to be met out of public funds, and the University was provided for annually on the Treasury vote. Since the Treasury had to meet any deficit on current account it supervised the University's expenditure in detail. Sir Douglas Logan records (*The University of London*, Athlone Press, 1962, p. 11) that the University " had in many respects the status of a Government Department ". As Professor Bellot has pointed out, " The University could not so much as print the Senate Minutes or increase the porter's wages by a shilling a week without Treasury approval ".

11. The Senate of the new University framed regulations for Matriculation and for Graduation, drew up syllabuses, and appointed examiners and approved the papers drafted by them. Their institution of a severe examination by means of which written papers in a wide range of subjects must be passed before entry to the University could be achieved, was an important innovation, and in time the London Matriculation Examination won for itself a place as evidence of high attainment before leaving school that was quite independent of the primary function of the examination as a test for University entrance. Before matriculated students could sit the final examination for a degree they were required by the University to produce a certificate of having satisfactorily completed courses of approved instruction. Such certificates might be granted by University College, King's College or by other listed institutions. Approval of institutions other than medical schools was granted by the Government and not by the University. " For the purpose of granting degrees of Bachelor of Medicine and Doctor of Medicine, and for the improvement of medical education in all its branches " the University should "from time to time report to one of our principal Secretaries of State what appeared to them to be the medical institutions and schools from which it may be fit and expedient to admit candidates for medical degrees ". If the University's report was favourable the recommended institution could be granted the right to enter candidates for the University examinations which led to graduation in medicine. Although, therefore, the University had no control over entry to the list of institutions authorised to enter candidates for examinations in arts and sciences, a medical school could not be put on the list of approved institutions without the recommendation of the University. Any medical school that desired to be approved in this way was required first to provide an account of the instruction given. But the University had no power to inspect those medical schools it recommended. A list of recognised medical schools was issued in 1840; by 1852 there were 63 medical schools from which candidates could be accepted for the examinations for the medical degree of the University of London. In 1854 an Act of Parliament extended " the rights enjoyed by the Graduates of Oxford and Cambridge in respect to the practice of Physic to the Graduates of the University of London ". In this way the London M.B. degree became recognised for medical practice.

(*e*) *Tuition and Examinations*

12. From the beginning, the teachers in the medical schools, like those in other faculties and institutions which provided courses for the degrees of the University of London, were hampered by their lack of control over the regulations and

examinations for the degrees, since these were wholly under the control of the non-teaching body which constituted the University of London. The regulations for the M.B. degree, formulated in 1839, required candidates to have matriculated, and to have been students for not less than two years in preparation for the First Medical Examination and for not less than a further two years for the Second Examination. Later, in 1860, a Preliminary Scientific Examination was instituted which had to be taken before proceeding to the two medical tests. Medical students in the London medical schools had long been accustomed to prepare for the Conjoint Board examinations of the Royal Colleges and they often began their studies unaware that before they could take a degree of the University of London they must matriculate. The passing of the London Matriculation Examination during the study of medicine was a difficult task; later the Preliminary Science Examination demanded scientific knowledge of the sort that was not expected of candidates for the diplomas of the Royal Colleges, or indeed from medical students at other universities. The examinations for the final M.B. degree as it was first instituted were more theoretical than those for the Conjoint Diploma, and in time the degree came to be regarded as in effect an Honours one, and suffered a heavy failure rate. In the early years as many as three-quarters of the degree candidates from the London medical schools might fail at the Matriculation and Preliminary Science Examinations, and only about 10 per cent succeeded in gaining the M.B. degree. In the circumstances one need not be surprised that most of the students in the medical schools in London continued to prepare themselves for, and sit the examinations of the Conjoint Board, long after the M.B. degree of the University of London had been instituted.

13. Until the Medical Act of 1858 which set up the " General Council of Medical Education and Registration of the United Kingdom " became effective, there were nineteen separate Licensing Bodies which could confer professional titles after tests widely different in character. Most of the titles had a purely local value, with the result, for example, that an Edinburgh practitioner might be unable to extend his practice legally to London, or even to Glasgow, while a graduate of the University of London was legally prohibited, on pain of prosecution by the Royal College of Surgeons, from practising as a physician in London. The establishment of the General Medical Council in 1858 remedied these anomalies and, in its report, the Royal Commission on the Medical Acts (1882) commented on the progress made in medical education, in London and elsewhere, between 1858 and 1881 and opined that in this period the General Medical Council had rendered valuable service to the profession and to the public.

14. From about the middle of the century fashion began to move in favour of university medical qualifications. A growing number of public appointments required an academic qualification in medicine, and changing customs in the use of the term " Doctor " made University degrees increasingly desirable. Because London medical degrees were exceptionally difficult to obtain, the medical schools in London found themselves in an awkward situation. Students often tended to go for the last year or two of their course to places where they could obtain a degree in medicine more easily, and for this purpose Durham, Newcastle, Scotland, Ireland or even Belgium might all be considered.

15. To those who objected to the continuation of this state of affairs the simple answer was that those who complained were demanding a lowering of standards and that such a lowering of standards could not be tolerated. Those who already had obtained a London medical degree were perhaps unwilling to see anybody else get it more easily, and certainly the reputation of this degree was good. But according to the critics the fundamental problem was not that the standard of the medical degree examinations was too high but that the examinations for it were not appropriate. An obvious solution lay in giving the body of University teachers the regulation of academic matters, and in transforming a Government Examining Board remotely associated with teaching institutions into part of an autonomous teaching University.

16. The Royal College of Physicians and the Royal College of Surgeons were conscious of the need in London for a more readily accessible medical degree if

medical education in London were to thrive. But to the Royal Colleges the proper solution to the problem appeared to be that they themselves should obtain the power to grant medical degrees. In November 1885 they sought incorporation under the name of the Senate of Physicians and Surgeons, with the power to grant medical degrees. Their petition was rejected because, as was said at the time, these bodies could not be regarded as having an academic character, and a degree-giving university should not be created in a single faculty. But this petition was not the only movement towards the attempted foundation in London of another university.

17. Those who were teaching in the institutes associated with the University of London were becoming increasingly impatient at their inability to influence curricula and examinations, and to effect the reform that seemed to them to have become essential. Even more frustration in London became manifest when in 1880 the Northern Colleges were combined to form in Manchester the chartered Victoria University. The London colleges were clearly in danger of being left in a position of inferiority because the pathway to the status of independent universities was blocked by the presence in London of an institution which was not at all the kind of university the teachers in the London colleges wanted. And so there followed proposals to set up a separate teaching University in London, first to be known as " Albert University " and later " Gresham University ", while at one time University College went so far as to consider an application for admission to the Victoria University as a means of securing some degree of home rule.

18. Such a situation clearly called for investigation and this was provided by the setting up in 1888 of a Royal Commission, under the Chairmanship of the Earl of Selborne. The recommendations of this Commission, which reported in 1889, were largely ineffective and in 1892 a new Commission, usually referred to as the Gresham Commission, was appointed to take up the task under the Chairmanship of Earl Cowper. The report of this Commission, which was published in 1894, made clear the view of the Commissioners that there should be only one university in London. The Commission believed that the establishment of an efficient teaching university could best be effected by the reconstruction of the existing one; so the Commission recommended the assignment of teaching duties as well as examining functions to the University as a whole, and a separation of " external " and " internal " students. In a sense the arrangements for external students continued those of the old University while for internal students teaching and examinations were newly related. The Commission envisaged that in the University the teachers as a body would " exercise such an influence upon the examinations and the studies of the University as to remove the objections advanced against the examinations of the existing University of London ". It also expressed the view that in principle the separation of teaching from research was undesirable since " any undue limitation of research to institutions specially set apart for that purpose would tend to lower the academic character of the schools of the University and the standard of teaching ". The Commission proposed the inclusion in the reconstructed University of University College, King's College, the Royal College of Science and of ten medical schools, among them the London School of Medicine for Women. These proposals were adopted, and new Statutes came into force in 1900, according to which " So soon as the funds of the University permit, the Senate . . . may provide lecture rooms, museums, laboratories, workshops and other facilities for the purpose both of teaching and research ". The University was now in a position to undertake teaching itself either in institutions under its own direct supervision or, in existing Colleges, by means of university-appointed teachers accommodated therein. In the event it ultimately pursued both courses. But whatever the means adopted the function of the University of London as a teaching institution had clearly been established.

(*f*) *The University Constitution of 1900*

19. The Senate of the reconstructed University met under its new Statutes for the first time in October 1900. Although the new constitution was in many respects a great improvement upon the old, it showed itself in practice to be unsatisfactory because every independent institution could pursue its own policy without regard to the welfare of the University as a whole. The outcome of this reconstitution of

the University of London was especially disappointing to the medical teachers. On the Senate of the University there was a disproportionate number of medical men who were not teachers, and in medical matters the policy of the Senate was dominated by those whose interests were in some ways antagonistic to the activities of a teaching university. Furthermore, at the turn of the century the London medical schools found themselves faced with a situation in which the numbers of students were falling and costs were rising rapidly. For the period 1885 to 1889 the average total annual entry to the London medical schools was about 650. There was an increasing demand for the services of competent medical men as the numbers and the wealth of the middle classes grew, yet in the period 1905 to 1909 the annual total entry to the London medical schools had fallen to about 250, and this fall could not wholly be attributed to the general decline in the number of medical students which began in the last decade of the nineteenth century. The fact was that the London medical schools were attracting a smaller share of the reduced number of medical students in the country as a whole. The reasons for the situation in London were many but there is no doubt that the growing cost of teaching the premedical and preclinical subjects was an important one. The cost of the teaching of basic sciences mounted as more and more expensive laboratories were needed, and there developed a keen competition for the available students. But since the teachers of the preliminary and intermediate subjects in the London medical schools were being paid inadequate salaries they migrated in increasing numbers to the medical schools and universities in the provinces and in Scotland. Some of the medical schools in London became willing or even anxious to drop the teaching of the basic sciences but were afraid to do so in case the others did not follow suit. And they all realized that University College and King's College could continue such teaching without undue difficulty and would certainly do so. The position of medical schools associated with universities outside of London was similar to that of University College and of King's College in the capital.

20. A possible solution to the problem in London was put forward which involved the concentration of teaching for the first two and a half years of the medical course either among a small number of the medical schools themselves, or in a single university institution. Alternatively the teaching could be carried out at University College or at King's College. A plan to put such a solution into effect was announced in 1902. This involved the establishment of a central medical institute in South Kensington to take over the teaching of the basic sciences to medical students from the medical schools, and a public appeal for funds for this purpose was issued by the University. But when £60,000 had been collected the Medical Faculty of the University rejected the plan which it first had sponsored and the money already collected had to be returned to the donors. According to the report of the Haldane Commission 1913 (p. 103) " The collapse of the scheme is attributed partly to the alteration in size and constitution of the Medical Faculty carried out after the inception of the scheme by the admission to it of the science teachers in the Medical Schools, who feared that by any measure of concentration they would be thrown out of employment; partly to jealousy of University and King's Colleges ". The embarrassing result of the initiative of the University left the medical schools even more estranged from the University than before and with their main problem still unsolved. Only much later, with the coming of Government grants and then the acceptance of the recommendations of the Goodenough Committee, was the continued existence ensured, up till the present time, of a large number of relatively independent preclinical courses in London.

(*g*) *The Report of the Haldane Commission*

21. Because the constitution of 1900 had proved to be unsatisfactory in practice yet another Royal Commission was set up, in 1909, under the Chairmanship of R. B. Haldane (later Viscount Haldane) who had greatly aided the passage through Parliament of the University of London Bill of 1898 upon the provisions of which the University Statutes of 1900 had been based.

22. The report of the Haldane Commission was published in 1913. The Commission agreed that " the University has signally failed to gain the sympathy and attachment of the London Medical Schools. They are almost as detached from

and independent of the University of London now as they were when the University was merely an examining Board, and there has been no means of organising either teaching or research with a single eye to the interests of medicine as a whole. Moreover the Medical Schools are no less independent of each other than they are of the University " (p. 100). Moreover " Although they are Schools of the University of London, the medical schools acknowledge only a very partial allegiance to the University, and have at present other interests and connections which ought not to prevent the University from setting its own house in order. Less than one third of their students are undergraduates of the University of London and the Medical Schools can scarcely be said to have any closer connection with the University of London than with the Universities of Oxford and Cambridge, or with the Conjoint Board of the Royal Colleges " (p. 102).

23. The Commission regarded the relatively independent status of the colleges and schools of the University as a serious defect in the constitution of the University of London, and it proposed changes which would virtually have made the schools only hand-maids of the University. But the outbreak of the First World War in 1914 brought matters to a standstill until 1924, when a departmental committee was set up to review the recommendations of the Haldane Commission. This Committee, under the Chairmanship of Commander Hilton Young (later Lord Kennet), reporting in 1926, stated its view that some degree of control by the central University authority over the schools of the University was desirable, but suggested a less drastic constitutional re-organisation than had been proposed by the Haldane Commission. The Statutes made in 1929 in conformity with these proposals, under the University of London Act 1926, prevail in principle today. As Sir Douglas Logan has written (*University of London, Report by the Principal 1964–65*, p. 40) " Haldane and Webb thought that, by bringing the teachers in a subject together in a University Board of Studies or Faculty, those teachers would forget institutional loyalties. Such a concept was viable only if, as was implicit in the Haldane Report, the teaching resources of the University were ultimately to be rationalised by the amalgamation of College departments in each subject into a composite University department. The Hilton Young Committee, while gracefully recognising the fact that the schools refused to be liquidated, continued the academic control at the centre over the activities of individual departments in the various schools of the University."

24. The Haldane Commission's Report of 1913 recommended improvement in the teaching of the clinical departments of the medical schools in London, where traditional but outmoded methods tended to remain. The problems were stated in simple terms in the evidence given to that Commission by Sir William Allchin; " In the incorporated Colleges of the University [University College and King's College] the earlier and intermediate subjects are now placed upon a thoroughly satisfactory basis of University teaching, where, in addition to furnishing the requisite instruction for the average man, the sciences are studied for their own sake and for the extension of the knowledge of them. The time has now come when similar provision must be made for the pursuance of Medicine, Surgery, and Pathology and their several branches in the same advanced and scientific manner." There seemed to be two main possibilities for such a development. The first was the establishment of a hospital entirely under the control of the University, where advanced clinical teaching and research could be concentrated; the second possibility was the dissemination of full-time University clinical Professors among the medical schools in what we know today as " Professorial " units. The first of these plans seemed to be in general agreement with the policy of the University in developing institutes of advanced study. But a possible disadvantage was seen that if the proposed new university hospital accepted undergraduate students there would be great difficulty in deciding which undergraduates should go to it and which to existing medical schools. On the other hand if the new University Hospital did not accept undergraduates but became purely postgraduate, it could drain the undergraduate schools of their best teachers and much of their research. Because the institution in the medical schools of full-time clinical professorships could infuse a university spirit into the separate schools the second possible plan was adopted by Haldane with enthusiasm, and this policy was the one ultimately put forward

by the Commission. The first of such professorial units was established in 1920–21 at St. Bartholomew's Hospital Medical School, St. Thomas's Hospital Medical School, the London School of Medicine for Women and at St. Mary's Hospital Medical School. Such a development involved no change in the organisation of the University of London nor did it seriously alter the relationship of the medical Schools to the central University authority, though it subjected certain of their appointments to control by a University Board of Advisers.

(*h*) *The Constitution of 1929*

25. The Statutes adopted by the University of London in 1929 provided for the representation of the medical schools on the new Collegiate Council, gave the Faculty of Medicine effective control over the medical curriculum and medical examinations, and, most importantly, made the University the channel through which passed the much needed financial assistance on its way to the Schools. But, as Sir Douglas Logan has pointed out (*University of London, Report by the Principal 1964–65*, p. 35), " The old order did not change and give place to the new either quickly or gracefully. This was made clear to me when in 1944, shortly after the publication of the Goodenough Report, I was lunching at one of our medical schools. Next to me was a leading surgeon who pointed out that the London teaching hospitals had clinical facilities which were known all over the world and the two Royal Colleges conducted examinations which led to diplomas which were registrable qualifications. Where, I was asked very pointedly, did the University impinge on medical education at all? "

26. The Report of the Goodenough Committee (1944) was absolutely clear on this point. It quoted with approval (p. 50) an extract from the memorandum of evidence submitted by St. Thomas's Hospital Medical School, which, it considered, summed up the prevailing view:

> " It is our considered opinion that in the future the University should play a greater part in the life of the School. The help of the University is necessary for the development of education and the formulation of policy. Further, a close association should assist in producing amongst the staff and students a broader view of academic work and encourage contacts with men in other faculties."

27. But the Goodenough Report also pointed out that in London the association between the medical school and its hospital was usually much closer than that between the medical school and the University, and the Committee recommended that all the general medical schools of the University of London which were not already separate legal entities should each become so by incorporation, and that the University of London should be represented on the governing bodies of the medical schools. This was clearly designed to bring heavier University influence to bear where before it had been relatively light.

(*i*) *Postgraduate Institutes in the University of London*

28. Early in the present century the University of London decided that the creation of a series of Institutes of Advanced Study, separate from and superior to the departments in its schools and colleges, was desirable. According to the report of the Gresham Commission (1894) " Independent Institutions are specially required for the study of those branches of scientific research which are either neglected or so inadequately represented in England that advanced students cross the Channel in order to find elsewhere what a teaching University of London ought to provide. We do not wish to dilate on the very large sums of money spent in Germany and other countries in order to keep abreast of the great scientific movements of the present day; but we think it our duty to state that for the condition of things in London—as compared with the facilities given, for instance, by so small a State as Zürich—no excuse can be found. We see no way in which the existing defects can be supplied except by establishing special institutions " (*Gresham Report* VII, p. XXI).

29. In accordance with the view of the Gresham Commission that any separation of research and teaching was undesirable (see para. 18 above), in the series of self-governing postgraduate institutes concerned with subjects in the Faculties of Arts and Laws set up in Bloomsbury in the neighbourhood of the British Museum from the nineteen-twenties onwards the permanent staff was usually limited to a Director with administrative and library assistants, and the postgraduate training and research carried out in them was conducted by teachers drawn from the undergraduate schools.

30. A lack of money prevented in 1901 the building of a University Institute of Chemistry which would have ranked as superior to the departments in the colleges, and subsequently the placing of two University Chairs of Chemistry at University College was the forerunner of a different general development in chemistry and in other basic scientific subjects.

(j) *Postgraduate Medical Education in London*

31. In January 1921, the then Minister of Health (Christopher Addison, later Lord Addison) set up a committee under the Chairmanship of the Earl of Athlone, to investigate " The needs of medical practitioners and other graduates for further education in medicine in London, and to submit proposals for a practicable scheme for meeting them ". The report of this Committee, which is conveniently referred to as the Athlone Committee, was published in May 1921. It assigned the beginning of postgraduate medical teaching in London to the demonstrations provided by Sir Jonathan Hutchinson in the early eighteen-nineties, and surveyed the nature and the extent of the demand for postgraduate medical instruction in London and what, up till that time, had been done to provide it. According to their Report the Committee did " not see our way to recommend that post-graduate instruction should be undertaken at the undergraduate schools except in two main directions. We are of opinion that instruction for the higher degrees and higher diplomas, with the exception of the Diploma of Public Health and the Diploma of Tropical Medicine, should continue to be provided at the undergraduate centres, and we also think it is at these centres that provision should principally be made for research students, though not to the exclusion of such valuable places as the Royal College of Surgeons, the Lister Institute, and the special hospitals " (*Report of the Post-graduate Medical Committee* (*Athlone Committee*) *1921*, pp. 13 and 14). The Report recommended that " A school attached to a Hospital centrally situated in London should be devoted solely to post-graduate medical education " and that further facilities for post-graduate study should be made available at non-teaching hospitals and in Poor Law Infirmaries (p. 25). Furthermore " An Institute of State Medicine should be established by the University of London in which instruction should be given in Public Health, Forensic Medicine, Industrial Medicine, and in medical ethics and economics " (p. 26).

32. The latter recommendation was the first to be made effective, by the development of the London School of Tropical Medicine which had been founded in 1899.* This School was expanded to include the University Departments responsible for teaching the courses which led to the Diploma in Public Health and became the London School of Hygiene and Tropical Medicine, which was incorporated by Royal Charter in 1924. A new building, opened in 1929, was erected and equipped with the aid of a grant from the Rockefeller Foundation given on the understanding that funds would be available from British sources for staffing and maintenance. In 1934 the Ross Institute of Tropical Hygiene, which had been founded in 1926 was incorporated in the London School of Hygiene and Tropical Medicine.

33. Another committee on Postgraduate Medical Education was set up in 1925, under the Chairmanship of the Minister of Health, " To draw up a practicable scheme of postgraduate medical education centered in London ". This committee reported in 1930. It recommended that the central postgraduate hospital and medical school which had been advocated by the Athlone Committee should be based on Hammersmith Hospital. This recommendation was quickly accepted,

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* See Appendix 15.

TABLE 2
The British Postgraduate Medical Federation, London, 1967
(Excluding the Institute of Dental Surgery)

Institute	*Main Hospital (or Hospitals) and date of oundation*	*Approval granted by the University of London for recognition as a federated Institute*		
		Date	*Period for which it was first granted*	*Date of expiry of present period of approval*
Basic Medical Sciences	—	Jan. 1957	5 years	1. 1.72
Cancer Research*	Royal Marsden (1851)	Nov. 1951	unlimited	—
Cardiology	National Heart (1857)	Apr. 1954	5 years	1. 4.69
Child Health	Great Ormond Street (1852)	Oct. 1948	3 years	1.10.72
Dermatology	St. John's (1863)	May 1959	5 years	1. 5.69
Diseases of the Chest	The Brompton (1842) and the London Chest Hospital (1848)	Oct. 1955	5 years	1.10.70
Laryngology and Otology	Royal National Throat, Nose and Ear (1862)	Oct. 1948	5 years	1.10.68
Neurology	National (1860) and Maida Vale (1866)	Aug. 1950	5 years	1. 8.68
Obstetrics and Gynaecology	Queen Charlotte's Maternity (1739) and the Chelsea Hospital for Women (1871)	Oct. 1949	5 years	1.10.69
Ophthalmology	Moorfields (1805)	Oct. 1948	5 years	1.10.68
Orthopaedics	Royal National Orthopaedic (1840)	Jan. 1951	5 years	1. 1.71
Royal Postgraduate Medical School	Hammersmith (1905) and St. Mark's (1835)	Dec. 1947	unlimited	—
Psychiatry†	Maudsley (1923) and Bethlem Royal (1247)	Mar. 1949	unlimited	—
Urology	St. Peter's (1860), St. Paul's (1897) and St. Philip's (1952)	May 1957	5 years	1. 5.72

* The Cancer Hospital (now Royal Marsden Hospital) was a School of the University of London from 1927 to November, 1951, when the Chester Beatty Research Institute, together with the Pollards Wood Research Station and certain departments in the hospital, became the Institute of Cancer Research.

† The Maudsley Hospital and the Bethlem Royal Hospital became Schools of the University of London in 1924. In 1948 the two hospitals were amalgamated. They then ceased to be Schools of the University, and the combined Hospital became the associated Hospital of the Institute of Psychiatry.

and the British Postgraduate Medical School (now the Royal Postgraduate Medical School) was founded at Hammersmith, incorporated by Royal Charter in 1931, and formally opened in 1935.

34. A problem of a different kind arose from the existence of numerous special hospitals in London which were independent of the general teaching hospitals with respect to teaching and research. Although some of the special hospitals in London may have had prototypes in the leper hospitals and mental asylums of medieval times, most of them were founded during the nineteenth century (see Table 2, above) in order to supplement and extend the general medical care provided by the existing hospitals. In any case some general hospitals were reluctant to provide the accommodation needed for the development of new, and sometimes quantitatively unimportant, specialties. Some of the special hospitals were built in rural areas so as to segregate patients with fevers and with mental illness, but others, for example maternity hospitals and hospitals for women, hospitals for children and hospitals for diseases of the eye, which mostly had been instituted for the purpose of treatment, were sited in the middle of cities. Except in London there was only one medical school in any one city in Great Britain and outside of London the special hospitals usually made an arrangement with the university medical school and its general teaching hospital whereby the special subjects were mostly or exclusively taught in the appropriate special hospital. In London, however, where there was no single undergraduate teaching hospital which could claim to be the one with which to be associated and postgraduate medical education was to some extent separated from undergraduate education, the special hospitals did not become linked to any general teaching hospital and undertook no undergraduate medical teaching. The large size and the wealth of London was such that the special hospitals in it came to occupy a position of outstanding distinction in their defined fields. The specialist consultants at the general teaching hospitals competed for the privilege of being also on the staff of the special hospital. For a young man who wished to train in a specialty a period of residence, both in junior and in senior posts, at the appropriate special hospital became desirable and almost essential. Courses of instruction were instituted at these special

hospitals for those who were less fortunate, or could not afford the time for a full-time post at them, so that when the Ministry of Health took over these hospitals in 1948 there were in London thirteen special hospitals, or groups of special hospitals, all of which were undertaking some postgraduate medical teaching. Of these the Royal Cancer Hospital and the Maudsley Hospital had for some time been established as schools of the University, while others (the Royal London Ophthalmic Hospital, the Hospital for Sick Children and the National Hospital for Nervous Diseases) had on their staff teachers recognised by the University.

35. The Athlone Committee (1921) thought that for the purpose of postgraduate teaching and research the special hospitals in London might be linked to the Central Postgraduate Hospital the establishment of which it advocated. But after the British Postgraduate Medical School had been set up in accordance with the recommendation of the Athlone Committee " difficulty has arisen from a reluctance on the part of the special hospitals to link up with the British Postgraduate Medical School because they feared that by so doing they might lose their identity and freedom of development " (*Goodenough Report* 1944, p. 226, para. 8).

36. According to the Goodenough Committee " Ideally, the British Postgraduate Medical School should be an integral part of a post-graduate hospital centre, consisting of a general hospital of appropriate size and a number of separate institutes for each of the principal branches of Medicine. For preference such a centre should be geographically related to the central buildings of the University, the Royal Medical Colleges, the Royal Society of Medicine and other medical and cultural societies. Residential accommodation for students and dining rooms and common rooms for staff and students should form part of the centre or be associated with it. A post-graduate centre of this nature would occupy a very large area of ground and the cost of the building would be great. Moreover, assuming that the site were in the centre of London, it is highly improbable that the hospital needs of the area would justify the erection of a new general hospital and special institutes except in replacement of existing hospitals. There is a redundancy of hospitals in the central area and the population is declining. The obstacles to the achievement of this ideal in the near future seem insuperable. Nevertheless, on a long view, it is desirable that the hospital authority for London should make the ideal one of its guides in the preparation and carrying out of its plans under the national health service " (*Goodenough Report*, p. 226, para 9). Further on (p. 229, para. 23) the Goodenough Committee's Report states: " the aim should be to have, at least as a beginning, one institute in each of the principal special subjects. Each of these institutes should be attached to an appropriate special hospital. The relation of the institute to the hospital to which it is attached should be the same as that between an undergraduate medical school and its parent teaching hospital."

37. As a result of the recommendations of the Goodenough Committee the teaching and research activities associated with each of the special hospitals, or with a group of special hospitals of similar interests, were brought together in a postgraduate institute which was incorporated as an entity that did not include the special hospital or group of hospitals. These institutes were linked together through the British Postgraduate Medical Federation, which was established by the Senate of the University of London in 1945, incorporated by Royal Charter in March 1947, and admitted as a school of the University of London in December 1947 (cf. Table 2 on page 302). An account of the early years of the Federation by its first director, the late Sir Francis Fraser, was published in 1967 (*The British Postgraduate Medical Federation: The First Fifteen Years.* University of London, The Athlone Press, 1967).

ANNEX

THE WEST LONDON HOSPITAL MEDICAL SCHOOL

1. In 1893 the West London Postgraduate College was founded at the West London Hospital, and continued to provide clinical instruction and lectures for postgraduate medical students off and on for many years subsequently.

2. The West London Hospital Medical School, which was founded specially for undergraduate women medical students (though there was no rule against the admission of men), opened its doors in October 1937. At that time the only medical schools in London which admitted women for undergraduate clinical instruction were the London School of Medicine for Women (later the Royal Free Hospital School of Medicine), King's College Hospital Medical School, and University College Hospital Medical School. The latter two clinical schools admitted a strictly limited small proportion of women students.

3. Although the newly-established West London Hospital Medical School was not a School of the University of London, the University recognised it for the clinical training of students coming within the purview of the University's Council for External Students. The School was recognised for clinical training also by the Universities of Oxford and Cambridge and by other licensing bodies.

4. As a result of the recommendation in 1944 of the Goodenough Committee (*Report*, p. 99, paras. 8 and 9) that "the payment to any medical school of Exchequer grants in aid of medical education should be conditional upon the school being co-educational " and that " the number of women students in any school should be a reasonable proportion of the whole, say about one-fifth ", all the London medical schools admitted women students as well as men, and the special contribution of the West London Hospital Medical School to the medical education of women in London became much less important. The Goodenough Committee, considering that the West London Hospital Medical School was too small to constitute an economically sound unit and that its expansion would involve a move to a new parent teaching hospital, recommended that this School should discontinue the training of undergraduate medical students (*Goodenough Report*, p. 61, paras. 69–71). The University of London, acting in accordance with this recommendation, withdrew its recognition in 1952.

5. In 1948 the West London Hospital was designated, with Hammersmith Hospital, as a postgraduate teaching hospital, and the expectation was that the West London Hospital (undergraduate) Medical School would run down and that its facilities would then be used for postgraduate training in conjunction with those at Hammersmith Hospital. Nevertheless the West London Hospital Medical School continued to prepare students for the medical degrees of Oxford and Cambridge and of some other universities and, at the request of the Colonial Office, for the examinations of the Conjoint Board.

6. There were difficulties, however, because under the National Health Service Act 1946 the Minister of Health was given responsibility for providing the clinical facilities for medical education only for Universities and the Board of Governors of the Hammersmith, West London and St. Mark's Hospitals, which until 1959 was responsible for the administration of the three hospitals, was not empowered to provide these facilities for a non-university undergraduate medical school.

7. The British Postgraduate Medical Federation, which became responsible for the postgraduate medical education carried out at Hammersmith Hospital and the West London Hospital by the British (now the Royal) Postgraduate Medical School, decided early in 1957 that it could no longer make effective use of the West London Hospital for postgraduate teaching and research, and declined to renew its small annual grant to the West London Hospital Medical School. The Minister of Health, after consulting the University of London, thereupon decided to revoke the designation of the West London Hospital as a constituent hospital of the Hammersmith Hospital group. But, since a plan had been adopted for rebuilding Charing Cross Hospital at Fulham, a proposal was made that the West London Hospital should be added to the Charing Cross Hospital group: this proposal was put into effect, and the designation of the West London Hospital as part of the Hammersmith Hospital group was revoked, on 1 April, 1959.

8. In 1958 an amalgamation of the West London Hospital Medical School with the Charing Cross Hospital Medical School was proposed, which would have involved recognition by the University of London of members of the clinical teaching staff concerned. But in June 1958 the University of London made clear its

unwillingness to approve such an amalgamation, and those responsible for the West London Hospital Medical School decided that the right course was to run the school down over the next four years. This was done and the West London Hospital Medical School no longer exists.

9. The teaching staff of the former West London Hospital Medical School has now been integrated with that of Charing Cross Hospital Medical School, and students at the latter receive part of their clinical tuition at the West London Hospital.

APPENDIX 15

THE HOSPITAL FOR TROPICAL DISEASES, LONDON

1. The Hospital for Tropical Diseases was founded in 1899 in the Albert Dock Hospital to provide clinical facilities for the London School of Tropical Medicine, which was established in the same year and located close to the Hospital. The Hospital received support from the Colonial Office and other sources but always remained a small highly specialised hospital with special laboratory services. In 1921 more commodious premises were obtained in Endsleigh Gardens, London, W.C.1, and the Hospital remained there until the outbreak of war in 1939 led to its closure; beds were then reserved in several London teaching hospitals for patients with tropical diseases. During the war the empty building in Endsleigh Gardens was bombed. After the war the Hospital re-opened in what had been a nursing home at 23 Devonshire Street, London, W.1, but the accommodation there was very limited and the space for laboratories quite inadequate.

2. In July 1948 the Hospital for Tropical Diseases became part of the University College Hospital group. In April 1950, with the agreement of all the interested parties, the Hospital moved from Devonshire Street to an unoccupied building (erected by the London County Council in 1938 as a maternity hospital) at St. Pancras Hospital, which had also been designated in 1948 a part of the University College Hospital group. The new premises provided 68 beds for tropical medicine (of which 34 were allocated to the Department of Clinical Tropical Medicine of the London School of Hygiene and Tropical Medicine), adequate out-patient facilities and good laboratory accommodation. Associated with the Hospital for Tropical Diseases was the Jordan Hospital, Redhill, which has accommodation for twenty-four leprosy patients who are under the care of Consultants at the Hospital for Tropical Diseases.

3. The Hospital for Tropical Diseases retained its original identity and purpose although since 1948 it has been administered by the Board of Governors of University College Hospital and its work has been coordinated in many ways with that of the latter hospital. The Chairman of the Medical Committee of the Hospital for Tropical Diseases and the Dean of the London School of Hygiene and Tropical Medicine are members of the Board of Governors of University College Hospital on the nomination of the University of London. The Chairman of the Board of Governors has served as a co-opted member of the Board of Management of the London School of Hygiene and Tropical Medicine.

4. The medical staff of the Hospital for Tropical Diseases are appointed by the Board of Governors of University College Hospital, except the Professor of Clinical Tropical Medicine and other members of the Department of Clinical Tropical Medicine, who are members of the staff of the London School of Hygiene and Tropical Medicine but have honorary contracts with the Board of Governors of University College Hospital.

5. There is a separate Medical Committee of the Hospital for Tropical Diseases which includes the Professor of Clinical Tropical Medicine and the Dean of the London School of Hygiene and Tropical Medicine. The Committee has complete clinical freedom and much autonomy in the making of junior staff appointments, and reports to the Board of Governors through the Medical Committee of University College Hospital. The Medical Committee of the Hospital for Tropical Diseases appoints two representatives to the Medical Committee of University College Hospital, normally its own Chairman and the Professor of Clinical Tropical Medicine.

6. Over the years there has been a merging of interests which is exemplified in several ways. Consultants from the general hospital and from the Hospital for Tropical Diseases are frequently invited to see and advise on patients in each other's wards. Transfer of patients is freely arranged and there is an agreed arrangement whereby patients transferred to the surgical wards of St. Pancras Hospital remain under the care of surgeons of the Hospital for Tropical Diseases. Recently the laboratories for clinical pathology of the Hospital for Tropical Diseases have been merged with those of St. Pancras Hospital, and the combined laboratories are now in the charge of the pathologist of the Hospital for Tropical Diseases.

7. The undergraduate clinical students of University College Hospital are encouraged to avail themselves of the facilities and special experience offered by the Hospital for Tropical Diseases and some of these students choose to spend an elective period at that Hospital. The medical staff of the Hospital for Tropical Diseases attend staff rounds at University College Hospital and demonstrate patients for staff and postgraduate students at the weekly clinical meetings. The postgraduate teaching sessions and staff rounds at University College Hospital are open to, and attended by, students who are taking courses at the London School of Hygiene and Tropical Medicine.

8. The considerable endowment funds of the Hospital for Tropical Diseases, which were available for research and general hospital purposes, were not merged with the endowment funds of University College Hospital and, although administered by the Board of Governors, have been employed separately for the purposes of the Hospital for Tropical Diseases. Freedom of the staff to recommend to the Board of Governors expenditure from these endowment funds for the purpose of meeting the special needs of the Hospital for Tropical Diseases has been of importance in preserving in a significant manner the independence of the members of this smaller body after it had become part of a larger one. These funds have enabled members of the staff to visit tropical countries, and have made possible the transfer to the Hospital of patients from abroad who were in need of special treatment and investigation and whose presence in the Hospital for Tropical Diseases was of value for teaching purposes. They have also assisted the special research interests of the hospital staff in a variety of ways.

9. The Commission has been told by all those concerned whom it has consulted that the arrangements outlined above work well. The coming together of the two hospitals has benefited both, and has made economy possible in all the services. The geographical separation of the Hospital for Tropical Diseases from the London School of Hygiene and Tropical Medicine is naturally of some disadvantage when the Hospital needs the services of Departments of the School such as Parasitology, Entomology, and Tropical Hygiene. This disadvantage is inherent in the establishment of the London School of Hygiene and Tropical Medicine as a special institute which is structurally separate from any hospital. The Dean of the London School of Hygiene and Tropical Medicine has told the Commission that in his opinion a small hospital for tropical diseases which was separated from the resources of a big teaching hospital, even though its parasitological services might be easier, would lose heavily on all other counts.

APPENDIX 16

A MODEL ORGANISATIONAL STRUCTURE FOR A UNIVERSITY HOSPITAL GROUP IN A REGIONAL HOSPITAL SERVICE

THE COMPOSITION OF UNIVERSITY HOSPITAL GROUPS

1. The Commission has recommended (see para. 500 of the Report) that the main hospitals in which a medical school carries out teaching, and preferably any other hospitals in the immediate area of the university which are used for teaching, should be known as university hospitals and should be managed as a single university hospital group within the regional system. With medical schools of the increased size which the Commission's proposals call for, hospitals outside the present teaching hospital groups would need to be brought into such university hospital groups. In a typical case a teaching hospital group with, at present, about 1,000 beds would have added to it one or more general hospitals and certain special hospitals (e.g. a children's hospital, a maternity hospital and preferably a psychiatric hospital, if there were one conveniently situated). A university hospital group thus constituted might be expected to have up to perhaps 3,000 beds, or up to perhaps 4,000 if it included a psychiatric hospital.

THE CONSTITUTION OF THE GOVERNING BODY OF A UNIVERSITY HOSPITAL GROUP

2. The management of so large a group would require a carefully designed internal organisational structure, involving appropriate delegation to committees and officers; each major hospital within the group would probably need an executive committee to deal with routine internal matters, so that the governing body of the group would be left free to concentrate on matters of policy.

3. The governing body of a university hospital group would be constituted differently from, and would have greater delegated authority than, a hospital management committee. The membership of the governing body would be small. The governors would be appointed by the regional hospital board but about one-half of them would be nominated by the university; one of them would normally be the dean of the medical school. The chairman of the governors would be appointed by the regional board after consultation with the university authorities concerned.

4. The constitution of the medical advisory committee to the governors, and the structure of medical administration within the university hospital group, would probably be influenced by the reports of the joint working parties, set up by the Health Departments, on organisation of medical work in hospitals,* although these reports were concerned with district hospitals rather than teaching hospitals. The medical advisory committee to the regional board would presumably include members nominated by the university and by the university hospital group, to ensure that the interests of medical education were adequately represented at the regional level.

THE POWERS OF THE GOVERNORS OF A UNIVERSITY HOSPITAL GROUP

5. The regional hospital board would be responsible to the appropriate Health Department for the general planning and finance of the whole region, so that these functions would not be divided as they now are in England and Wales between the regional boards and boards of governors.

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* Report of the Joint Working Party on the Organisation of Medical Work in Hospitals. H.M.S.O., 1967.

Report of the Joint Working Party on the Organisation of Medical Work in the Hospital Service in Scotland. H.M.S.O., 1967.

6. The governors of a university hospital group would be empowered to undertake capital works on the same conditions as is a board of governors at present, the conditions being modified as necessary to fit in with the arrangements for the control by the appropriate Health Department of the regional hospital board's capital programme, of which these works would form part.

7. The initial revenue allocations to a new university hospital group would be discussed by the regional hospital board, the governors of the university hospital group and the appropriate Health Department. The Health Department would then, in its allocations to the regional hospital board, specifically earmark the initial revenue allocations for the university hospital group. Subsequent allocations would be determined by the regional hospital board after discussion with the governors of the university hospital group.

8. The governors would have delegated authority from the regional hospital board to handle all administrative matters not involving major planning decisions such as the provision of a new hospital for the group, or major capital expenditure (these terms would require careful definition). The governors would, for example, have the authority to appoint all medical and non-medical staff within the authorised establishment; this authority would be exercised in a way similar to the practice of boards of governors at present. They might also be expected to have the authority for expenditure, within their total capital allocation, of the order required for internal reorganisation and for redeployment of resources already available in the existing hospitals, and for expenditure up to a specified level on new buildings. Their powers would therefore be substantially greater than those now delegated to hospital management committees, but there would be a single coherent plan for the development of the hospital service of a region and a unified budget should lead to greater flexibility in the deployment of resources.

APPENDIX 17

ASSOCIATIONS BETWEEN MEDICAL INSTITUTIONS IN THE UNITED KINGDOM AND MEDICAL INSTITUTIONS IN THE DEVELOPING COUNTRIES

Source: Ministry of Overseas Development

List A: ASSOCIATIONS EXISTING IN OCTOBER, 1967 (excluding exchanges of students)

List B: ASSOCIATIONS UNDER CONSIDERATION IN OCTOBER 1967 (excluding exchanges of students)

List C: EXCHANGES OF STUDENTS (arrangements in existence in October, 1967)

Notes:

1. The associations listed are those which have resulted in a formal or informal arrangement for continuing co-operative activity. The lists do not attempt to include the large number of contacts that most university faculties of medicine have, either as such or through the activities of individual departments or senior staff members, with overseas teaching institutions.

2. Only the central features of the associations are described. In every association there is close professional consultation and collaboration, and in many there are arrangements for exchange visits, at a senior level.

3. Associations assisted by British Government funds (including in some instances the provision of equipment required in support of the association) are marked *.

4. The lists exclude relationships with institutions in the more highly developed parts of the world.

5. The lists may not be exhaustive but cover all associations, within the definition given in Note 1, of which the Ministry of Overseas Development had knowledge in November, 1967.

LIST A

ASSOCIATIONS BETWEEN MEDICAL INSTITUTIONS IN THE UNITED KINGDOM AND MEDICAL INSTITUTIONS IN THE DEVELOPING COUNTRIES IN OCTOBER, 1967

(*excluding exchanges of students*)

United Kingdom Institution	*Overseas Institution*	*Description*
ABERDEEN		
Aberdeen University (Department of Psychiatry)	University of the West Indies and University Hospital, Jamaica (Department of Psychiatry)	*Exchange of Registrars for one year, 1967-68, in the first instance.
BELFAST		
Queen's University (Departments of Midwifery and Gynaecology)	Singapore University (Department of Obstetrics and Gynaecology)	*Exchange of staff, started in July, 1967 with the secondment of a doctor from Belfast.

United Kingdom Institution	*Overseas Institution*	*Description*
BIRMINGHAM		
Birmingham University (Faculty of Medicine)	University College, Salisbury, Rhodesia (Faculty of Medicine)	Students will initially take Birmingham degrees. *Visits of Birmingham teaching staff. Exchange of selected students (See List C).
BRISTOL		
Bristol University (Faculty of Medicine)	Dar-es-Salaam Medical School, Tanzania	Development interrupted by the termination of diplomatic relations.
Bristol University (Department of Radiology)	Makerere University College Medical School and Mulago Hospital, Uganda, University of East Africa	*Secondment of a Consultant radiologist and a Superintendent radiographer, to start a school of radiography
	University of the West Indies and University Hospital, Jamaica (Department of Radiology)	*A school of radiology has been established. Two lecturers have completed tours on secondment and a third has been appointed.
Bristol Royal Hospital	Nursing School of Bamenda, West Cameroon	*A Nurse Tutor and a Ward Sister have been seconded for 18 months. There will be successive secondments for at least 5 years.
CARDIFF		
Welsh National School of Medicine (in conjunction with the Royal Free Hospital School of Medicine)	University of the West Indies, Jamaica	Occasional visits by senior Cardiff teachers and exchange of teaching staff at lower levels.
EDINBURGH		
Edinburgh University (Faculty of Medicine)		* There are three Technical Assistance Lectureships, financed by the Ministry of Overseas Development, in the Edinburgh University Faculty of Medicine, holders of which are available for overseas assignments.
	Baroda Medical College, India	Under the auspices of WHO some six Consultants are maintained at Baroda: equipment has been supplied by Edinburgh University, by the British Government, and by WHO.

United Kingdom Institution	*Overseas Institution*	*Description*
Princess Margaret Rose Orthopaedic Hospital	University of Hong Kong (Department of Orthopaedic Surgery)	* Appointment of a surgeon to the University of Hong Kong for one year from March, 1968.
Royal College of Surgeons, Edinburgh	Postgraduate Medical Institute, Dacca, Pakistan and the University of Hong Kong	* Provision of examiners for Primary F.R.C.S. examinations, starting in 1966.
GLASGOW		
University of Glasgow (Faculty of Medicine) and Western Regional Hospital Board (Scotland)	University College, Nairobi Medical School Kenya, University of East Africa	* University of Glasgow, and the Western Regional Hospital Board (Scotland) provide staff for the Departments of Medicine, Surgery, Orthopaedics, Obstetrics and Gynaecology, Pathology, and Anaesthetics.
University of Glasgow (Department of Pathology)	Dar-es-Salaam Medical School, Tanzania (Department of Pathology)	* Secondment of pathologists.
LIVERPOOL		
Liverpool School of Tropical Medicine, University of Liverpool		* There are nine Technical Assistance Lectureships, financed by the Ministry of Overseas Development, at the Liverpool School of Tropical Medicine, the holders of which are available for overseas assignments.
	University of Ibadan, Nigeria (Faculty of Medicine)	Visiting lectureship financed by the Leverhulme Trust Fund from 1962: to cease in 1968.
	University of Lagos Medical School, Nigeria	* A visiting Lecturer was seconded to the University of Lagos Medical School in 1966, and will return to Lagos in 1968 for a further short secondment.
	Faculty of Tropical Medicine, Bangkok, Thailand	* The Dean of the Liverpool School of Tropical Medicine is consultant to the Faculty of Tropical Medicine, Bangkok.
	South East Asian Ministers of Education Secretariat	* The Dean of the Liverpool School of Tropical Medicine is consultant and adviser to the Central Co-ordinating Board of S.E.A.M.E.S.

United Kingdom Institution	*Overseas Institution*	*Description*
LONDON		
University of London	University of the West Indies	* Students prepared for University of London examinations. Visits by London examiners. Consultations on syllabus content and examinations. This relationship expires in April, 1968. (A similar relationship between the University of London and the University of Ibadan ended in April, 1967.)
The Royal Postgraduate Medical School, University of London	Institute of Postgraduate Medical Education and Research, Chandigarh, India	* Exchange of staff. A pilot phase of about 5 years starting in September, 1967 to strengthen the investigative services at Chandigarh.
The London School of Hygiene and Tropical Medicine, University of London.		* There are nine Technical Assistance Lectureships, financed by the Ministry of Overseas Development, at the L.S.H.T.M., the holders of which are available for overseas assignments.
Institute of Cancer Research, University of London (in association with the Royal Marsden Hospital)	Royal University of Malta (Faculty of Medicine and Surgery)	Consultations and assistance in connection with radiotherapy and application of physics to medicine.
Institute of Child Health, University of London (in association with The Hospital for Sick Children, Great Ormond Street).	Mulago Hospital and Makerere University College Medical School, Uganda, University of East Africa	* Successive secondment of Senior Registrar and two Nursing Sisters: annual visits by a Consultant.
Institute of Dermatology, University of London (in association with St. John's Hospital for Diseases of the Skin).	University of Ibadan and University College Hospital, Nigeria	* Secondment of Senior Registrars to the Department of Dermatology for a year at a time since 1962. (Temporarily in abeyance in 1967).
Institute of Laryngology and Otology, University of London	University of the West Indies, and University Hospital, Jamaica, in association with Kingston Public Hospital	* Secondment of successive Lecturers.
Institute of Neurology, University of London	Makerere University College Medical School, Uganda, University of East Africa	* Secondment of Recognised Teacher from the Institute of Neurology for one month October–November, 1967 in first instance.

United Kingdom Institution	*Overseas Institution*	*Description*
Institute of Obstetrics and Gynaecology, University of London	Royal University of Malta (Faculty of Medicine)	Joint Lectureship appointments to supply a Hammersmith Hospital trained Lecturer in obstetrics and gynaecology to Malta: first appointment, October, 1967.
Institute of Ophthalmology, University of London (in association with Moorfields Eye Hospital)	St. John's Ophthalmic Hospital, Jerusalem	Secondment of Senior Registrars for periods of six to twelve months.
Royal National Orthopaedic Hospital (in association with the Institute of Orthopaedics, University of London)	University of the West Indies (Faculty of Medicine)	* In 1965 a Registrar was seconded for two years to the post of Senior Lecturer in Orthopaedic Surgery
	Kano Orthopaedic Hospital, Nigeria	* Successive secondment of a Consultant, a Registrar, and a Nursing Sister to act as Matron.
Royal College of Surgeons, London	Makerere University College Medical School, Uganda, University of East Africa University of Ceylon (Faculty of Medicine) King Edward Medical College, Lahore, Pakistan University of Khartoum, Sudan (Faculty of Medicine) University of Cairo (Faculty of Medicine)	Holding of Primary F.R.C.S., F.F.A.R.C.S., and F.D.S.R.C.S. Examinations (anatomy, Physiology, Pathology, Pharmacology) and assistance if required with preparatory courses in the basic medical sciences.
King's College Hospital Medical School, University of London	Christian Medical College, Vellore, India	* Secondment of a Lecturer (Medicine) in October, 1967, with a view to an exchange of staff.
King's College Hospital	University College Hospital, Ibadan, Nigeria	Successive secondments of a Sister Tutor.
Royal Free Hospital School of Medicine (Department of Pathology), University of London	University of the West Indies and University Hospital, Jamaica (Department of Pathology)	* Secondment of Lecturers.
	Princess Margaret Hospital, Nassau, Government of Bahamas	Appointment and assessment of the work by the morbid anatomy staff. Annual visit by senior member of Royal Free Hospital staff.

United Kingdom Institution	*Overseas Institution*	*Description*
Royal Free Hospital School of Medicine (Department of Pathology), University of London	Grant Medical College, Bombay University (Department of Pathology)	Interchange of staff, two way. Short term visits.
Royal Free Hospital School of Medicine (Department of Anatomy) University of London	Makerere University College Medical School, Uganda (Department of Anatomy), University of East Africa	* Training at Makerere of a postgraduate student from the Royal Free Hospital School of Medicine.
St. Thomas's Hospital Medical School, University of London	University Hospital, Jamaica	* Exchange of Medical Registrars starting in 1967.
OXFORD		
Oxford Regional Hospital Board and the University of Oxford, Nuffield Department of Orthopaedics (Nuffield Orthopaedic Centre)	University of Khartoum, Sudan	Secondment on an annual basis of a Senior Lecturer in Orthopaedics to Khartoum, and the training of Sudanese surgeons in orthopaedics at Oxford. Sudanese nurses and radiographers have also received training.

LIST B

ASSOCIATIONS BETWEEN MEDICAL INSTITUTIONS IN THE UNITED KINGDOM AND MEDICAL INSTITUTIONS IN THE DEVELOPING COUNTRIES, UNDER CONSIDERATION IN OCTOBER, 1967

(excluding exchanges of students)

United Kingdom Institution	*Overseas Institution*	*Description*
LONDON		
University of London Medical Schools	Government of Saudi Arabia and the University of Riyadh	For assistance in establishing a new medical school and teaching hospital.
Charing Cross Hospital Medical School (Department of Bacteriology)	University of Lagos Medical School, Nigeria	Secondment of a Lecturer.
Guy's Hospital Medical School (Department of Anatomy)	Royal University of Malta (Faculty of Medicine and Surgery)	Consultations in progress on the secondment of staff from Guy's Hospital Medical School for short periods.
Middlesex Hospital Medical School	University College, Nairobi Medical School, Kenya, University of East Africa	Secondment of staff from the Middlesex Hospital Medical School to the Medical School in Nairobi.

United Kingdom Institution	*Overseas Institution*	*Description*
Royal Free Hospital School of Medicine (Department of Pathology)	University of Ghana (Faculty of Medicine)	Secondment of a haematologist.
MANCHESTER		
University of Manchester (Faculty of Medicine)	Trivandrum Medical College, India	Consultations in progress on an exchange of staff.
NEWCASTLE		
Newcastle University (Faculty of Medicine)	Fourah Bay Medical School, Sierra Leone	Pending the establishment of a medical school at Fourah Bay, Newcastle University is prepared to make a limited number of places available to eligible Sierra Leone medical students.

LIST C

EXCHANGES OF STUDENTS

(*arrangements in existence in October*, 1967)

(i) *Nuffield Travelling Scholarships in Tropical Medicine*

(The scheme began in 1962–63 when some 20 British students from fourteen medical schools were enabled to spend three months, during their final year before qualification, at a Commonwealth medical school. 24 United Kingdom medical schools are now linked, in pairs, to overseas medical institutions, and there is a two-way flow of senior students.)

United Kingdom Medical Schools	*Overseas Institution*
Aberdeen University *and* Newcastle-on-Tyne University	Central Medical School, Suva, Fiji
Queens University, Belfast *and* St. Thomas's Hospital Medical School	King Edward VII Medical College, Lahore, Pakistan
Birmingham University *and* University of Glasgow	University College of Rhodesia Medical School, Salisbury
Bristol University *and* Westminster Medical School	University College, Makerere, Uganda
Charing Cross Hospital Medical School *and* Oxford University	Khyber Medical School, Peshawar, Pakistan
University of Dundee *and* St. Mary's Hospital Medical School	University of Singapore
Edinburgh University *and* Middlesex Hospital Medical School	University College of Nigeria, Ibadan
Guy's Hospital Medical School *and* Sheffield University	Queen Mary's College, University of Hong Kong
King's College Hospital Medical School *and* Manchester University	University of Ceylon
Leeds University *and* St. Bartholomew's Hospital Medical School	All India Institute of Medical Sciences, Delhi
Liverpool University *and* London Hospital Medical College	Christian Medical College, Vellore, India
Royal Free Hospital School of Medicine *and* Welsh National School of Medicine	University of the West Indies

(ii) *Other Schemes*

(Not all these schemes are " exchanges " in the sense that the arrangements are reciprocal).

United Kingdom Institution	*Overseas Institution*	*Description*
University of Birmingham (Faculty of Medicine)	University College, Salisbury, Rhodesia (Faculty of Medicine)	* Exchange of selected students for either intercalated B.Sc. one year course, or three months clinical attachment (see also List A).
University of London:		
St. Thomas's Hospital Medical School	Makerere University College Medical School, University of East Africa	Periodic exchange of students for three months.
University College Hospital Medical School	University of Ibadan (Faculty of Medicine) Nigeria	Two-way exchange of students financed by the Leverhulme Trust Fund.
Westminster Medical School	Royal University of Malta (Faculty of Medicine)	Two students a year, on an exchange basis, spend one month studying obstetrics and gynaecology.
University of Manchester (Faculty of Medicine)	University of Malawi	Annual acceptance into the medical school at Manchester, for a trial period of 3 years from October, 1967, of 2 students who have completed one year at Malawi University.
University of Oxford (Faculty of Medicine)	Makerere University College Medical School, University of East Africa (Department of Physiology)	Informal arrangements for one or two Oxford clinical students to study and work at Makerere for one year.

APPENDIX 18

SUPPLY OF BRITISH DOCTORS FOR SERVICE IN THE DEVELOPING COUNTRIES*

1. In the past a large proportion of British doctors who served in the poorer countries of the Commonwealth in Asia, Africa and elsewhere spent all or a considerable part of their working life abroad. They could properly be regarded as "permanent" immigrants, as they were in the estimates made by the Willink Committee. The situation has now changed. Periods of service abroad often last only a few years, and are sometimes spent on secondment from a British university or research institute. If arrangements of this kind, involving frequent movements to and from overseas for relatively short periods, become more common they cannot satisfactorily be treated as immigration and emigration. The number of doctors who serve overseas at some time in their lives is less relevant, for the purpose of estimating future manpower requirements in this connection, than the total number of man-years spent overseas. The most convenient way of estimating this is to regard the doctors from Britain serving in developing countries as part of the total number of doctors working in Britain.

2. A survey† of a 5% sample of doctors registering on the "home" list of the General Medical Council in 1925–59 suggests that, in mid-1962, about 1,700 of the doctors registered in that period who had been born and trained in Britain were resident in developing countries (mainly in Africa and Asia). The number of doctors working in these countries, who, as suggested in para. 1 above, can be regarded as part of the total working in Britain, will include in addition to the 1,700 already mentioned those who were trained and resident (but not born) in Britain and those who registered before 1925; those who registered after 1925, but have since retired, must be subtracted to arrive at the number still working. Rough adjustments in these respects lead to an estimate of 1,800. There is evidence, however, that the number of directly-recruited doctors working in developing countries has fallen by several hundred since 1962, probably mainly because of losses in re-organisations following independence; but the numbers on secondment have increased. A rough but reasonable approximation to the total in 1965 is 1,600.

3. The age distribution of the doctors concerned can be estimated from the findings of the above-mentioned survey as to year of registration. If they die and retire at the same rates as doctors actually working in Britain,‡ the number required to replace losses from these causes over the next ten years will probably be about 30 a year (the wastage in this period will be relatively modest because of the high proportion of young people among the doctors serving overseas).

4. The Ministry of Overseas Development at present recruits about 140 doctors a year for posts in the government medical services of developing countries, and some others are found by other agencies (notably the Commonwealth High Commissions in Britain). The Ministry estimates that the total number of doctors in these posts is about 500–550. The fact that there are about four or five doctors already in service overseas for each one newly recruited suggests that few spend more than three to five years of continuous duty overseas. The Ministry knows that attempts are being made to fill at least 300 vacancies at present and believes that the number of requests for doctors is limited by the knowledge that such requests are unlikely to be met without much delay, if at all. The Ministry thinks that its annual recruitment of doctors for such posts would rise to 250 if enough candidates came

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* See paragraphs 540–542 on page 221 of the Report. These estimates were made in 1966.

† ABEL-SMITH, B. and GALES, K., British Doctors at Home and Abroad. Codicote Press, 1964.

‡ See paras. 352–357 on pp. 142–145 of the Report.

forward; other agencies would add substantially to this number. These estimates imply that the total number serving overseas would be more than doubled, that is increased by at least six hundred, if enough new entrants were available.

5. The evidence on the level of demand for British medical teachers is more sketchy. Rough estimates, based on the report of the Tananarive Conference,* suggest an increase of about 130 in the total number of medical teachers from Britain serving in Middle Africa in the ten years following 1961–62: the main part of this rise was expected to take place before 1966–67, but seems not to have done so. An additional, but smaller increase in the number of British medical teachers will probably be required in other areas, e.g. the West Indies, Malaya and India. Some of the demands are likely to be met by links between British and overseas medical schools and by the provision of special posts in British universities and medical institutes in order that staff can be seconded to work abroad. The additional number of British doctors needed for teaching in overseas medical schools within ten years, as a result of all these developments, may be of the order of 200. About sixty a year have been recruited recently through the Inter-University Council for Higher Education Overseas and the Ministry of Overseas Development; the numbers are expected to increase greatly as overseas medical schools develop. In view of the short average period of service involved, these figures are consistent with an estimate that the total number serving overseas will rise by about 200.

6. Not more than one-half of the British doctors now working in developing countries are employed in the posts, in government service or in medical schools, for which expansion possibilities have been examined above. The remainder are in research (which has suffered particularly badly from the loss of expatriates), in the service of religious bodies and industrial concerns and in other work. Any assessment of the growth in the number of doctors required for these purposes and for other developments such as family planning programmes must be very speculative. The basic need is clearly great but whether progress will be sufficient to permit expansion cannot easily be predicted: on the assumption that growth in these services will be much slower than in government and medical school posts, an increase of 200 a year over the next ten years in the number of doctors needed for such services may be tentatively suggested.

7. The foregoing estimates suggest altogether a rise in the number of British doctors working in developing countries of about one thousand (or one hundred in each year) over the next ten years, to a total of 2,600. At such a level slightly more than 3% of the total number of British doctors would be overseas in service of this kind at any one time.

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* The Development of Higher Education in Africa, Part 2, Section I. UNESCO, 1963.

APPENDIX 19

SURVEY OF MEDICAL STUDENTS IN 1966

Summary Report by the Association for the Study of Medical Education and the National Foundation for Educational Research in England and Wales.

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AIMS AND METHODS OF THE SURVEY

Introduction:

The Royal Commission on Medical Education invited the Association for the Study of Medical Education to put forward plans for a survey of Medical Students in 1966. The Association sought the aid of the National Foundation for Educational Research in England and Wales. A combined team from the two bodies drew up a plan (including intelligence tests) for studying all the students in the First (Preclinical) and Final Years in all the medical schools in the United Kingdom. In August 1966 this plan (with the exception of the intelligence testing) was accepted by the Royal Commission, which requested A.S.M.E. and the N.F.E.R. to conduct the enquiry on its behalf with funds made available by the Treasury. The Members of the joint Research Team were:

A.S.M.E.		N.F.E.R.	
Dr. J. R. Ellis	London	Dr. W. D. Wall	
Prof. J. Anderson	London	Mr. A. N. James	
Dr. J. M. Last	Edinburgh	Mrs. S. K. Barry	Research Officer
Dr. S. G. Owen	Newcastle	Dr. K. Pettingale	Research Assistant
Dr. F. M. Martin	Edinburgh	Miss J. Davies	
Prof. G. A. Smart	Newcastle		
Dr. J. F. Stokes	London		

The Aims of the Survey:

The scope of the enquiry was conditioned by three factors:

1. The need to obtain the maximum basic information about current medical students.

2. The need to relate the findings of 1966 to those of a similar but more limited survey carried out in 1961 by the Association for the Study of Medical Education, so as to reveal any trends of change.

3. The need to produce results in the quickest time. The Autumn months of 1966 were the latest in which questionnaires could be given to students, and all tables requested by the Royal Commission had to reach it by March, 1967.

The Students Studied:

The need for speed necessitated the decision to restrict the survey to the First and Final Year students in all schools—a total of rather less than 5,000. By using results of the 1961 survey we are able to report on information relating to three groups of students, each separated by five years:

1. The Final Year students of 1961, numbering 1,684.*
2. The Final Year students of 1966, numbering 1,907.*
3. The First (Preclinical) Year students of 1966, numbering 2,522.

The Final Year students of 1966 included all those taking their Final examinations for the first time in either October or December 1966, May 1967, or June 1967.

The First Year students of 1966 were those who began preclinical studies (or in the case of Newcastle students combined Preclinical and Clinical studies) in October, 1966. Some of these students (particularly those in Scottish schools) had passed the first M.B. after a Pre-Medical year in the University; more of them (and a high percentage of those in London) had obtained exemption from first M.B. by " A " Level passes in G.C.E. from Secondary school or technical college and were entering the University in October, 1966.

It will be noted that some students in the final year in 1966 were in their first pre-clinica year in 1961 and were studied in the 1961 survey. Some of these were then in their first year at Oxford and Cambridge. Some were in other universities in 1961 and have since had an extended course, either to take a B.Sc. degree, or by illness, or by academic failure, or for some other reason. Unfortunately, in the survey of 1961, students were classified as being in years 1 to 6, i.e. the First year was taken to be the Pre-medical year. This must be borne in mind when interpreting the tables of the 1961 survey.

Comparisons between 1961 and 1966 are complicated and limited by another factor. Most unfortunately, it proved impossible in 1961 to convince the then Deans of three medical schools of the importance of surveys of this kind. Access was denied to the students of the Royal Free Hospital School of Medicine and Charing Cross Hospital Medical School in London, and of the medical school of St. Andrews University. Consequently, exact comparisons between 1961 and 1966 are not possible. The omission of the Royal Free is particularly regrettable as it was mainly a medical school for women, and still has an unusually large number of women students. Moreover, comparison of the 1966 Final Year Royal Free students with the 1966 First Year shows great differences between them, which leads us to believe that important changes in admission took place between the years.

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* On later pages, unless otherwise specified, "Final Year" refers to students in their final year in 1966.

The 1961 survey also included Trinity College, Dublin. When comparisons are made between the results of the 1961 survey and those of the 1966 survey, we have excluded the students of the Royal Free, Charing Cross and St. Andrews from the 1966 survey and the students of Trinity College, Dublin, from that of 1961. Owing to these exclusions, comparisons are apt to indicate for some factors a less pronounced, and for others a more pronounced, trend than would have been expected if all schools had been included in both surveys.

We have made comparisons between the years " Final '61", " Final '66 " (First '61) and " First '66", wherever possible in the hope of revealing both constancies and trends of change over a period of ten years.

For both Final and First Year students the response rate in different schools ranged from 72% to 100%. The overall response rates were as follows:

Final Year 94·7%
First Year 95·7%

The 1961 survey met with a similar response rate, unusually high for surveys of this kind. British medical students would appear to be responsibly-minded in regard to providing information on which to base medical education. On this occasion, the greatest help and cooperation was obtained from the Deans of the Medical Schools, for which the Research Team wish to record their gratitude. No opposition were encountered similar to that found in 1961 in the three schools mentioned.

The number of students who completed the questionnaire was:

Final Year 1,806
First Year 2,413

The Method of Enquiry:

Information was obtained solely by questionnaires, one for final year and another, shorter one for first year students. A Pilot study (involving 15 final year students and 20 first year students) was made, as a result of which some questions were expressed differently and more detailed instructions given. The data were transmitted to 80 column punched cards and analysed by computer using the General Survey Programs.

The Questionnaires:

The first year questionnaire was short, since evaluative questions regarding the course could not be asked of these students. At the time it was administered, they had been in the medical school for approximately six weeks only. The questionnaire had 47 questions under six sections and the data obtained filled one 80 column card.

The questionnaire for the final year students was longer and designed to collect information over a more extensive area. It contained 95 questions divided into 9 sections, covering: home background, education prior to entering medical school, learning experience in the medical school and its evaluation, personal learning methods, examination passes and failures, career choice and future plans. The information obtained from this questionnaire spread over three 80 column punch cards.

Limitations of time restricted the scope of the questionnaires to the most essential data. For the same reason, almost all questions were precoded and very few open-ended questions were included, with the disadvantage that in the majority of questions the range of responses was predetermined and limited to the offered alternatives. Copies of the questionnaires are in Annex A (First Year Students) and Annex B (Final Year Students).

The Procedure:

Two months were allocated for the field work. The final year questionnaires had to be administered in October. Deans were requested to make arrangements for assembling the students, but in most schools this proved to be impossible, and the questionnaire was administered either to small groups or to individuals, requesting their return by a given date prior to the end of October. Instruction sheets were duplicated and supplied with the questionnaires. Some final year students were close to their examinations and might therefore be expected to be either unduly anxious or unduly flippant in their answers. We found no evidence of the latter.

For the administration of the questionnaire to first year students, the second half of November was chosen. This made it possible for students to be in college for at least six weeks before answering the questionnaire. Most schools assembled the students and the questionnaire was administered either by the Research Team or by college staff.

Students were asked to put their names on the questionnaires. Medical schools were requested to supply us with a list of their students to make a follow-up possible (if needed). The completed questionnaires were ticked against the names on the lists. This also enabled us to reach those students who did not complete their questionnaires and request them to do so. Less than 20 students resented being asked to state their names and maintained that lack of anonymity inhibited true response.

The need to complete the field work in two months necessitated a considerable effort on the part of medical schools; without this the rate of response obtained would have been much lower, and the completion of the survey in such a limited time would have been virtually impossible.

The analysis of the data had also to be done quickly and for this we are indebted to International Computers and Tabulators Ltd. and Rothamsted Experimental Station for their prompt help and co-operation.

The Analysis:

We analysed the data in three main groups:

A. The students' background, including: occupation of fathers, area of permanent domicile, type of community lived in (mainly) prior to entering medical school, type of secondary school attended, achievement prior to entering medical school, and the possible effect of these factors on admission to medical school.

B. Financial and living arrangements during the course; habits of study; opportunities provided by the colleges; the students' evaluation of the course; achievement in the medical course;[*] interrelationship between achievement, methods of learning, and facilities provided by the college; and interrelationships between factors mentioned under A and C.

C. Future plans, doubts, career choice and plans for emigration; interrelationships between these two, changes in future plans during the course, interrelationships between these factors and those included under A and B.

This report is presented in a similar sequence. It is a summarised version of that submitted to the Royal Commission. The Association and the Foundation have permission to publish a more detailed report later.

SECTION A. THE STUDENTS AND THEIR BACKGROUND

I. THE STUDENT'S DOMICILE

(a) Country of Origin

The numbers of students in each year who completed the questionnaire were as follows:

TABLE 1A

	Total	*From Overseas*	*Overseas as % of total*
Final '61	1,684	197	11·7
Final '66 (First '61)	1,806	118	6·5
First '66	2,413	114	4·7

Home Students: drop-out and output

In any one year in a medical school there will be some students who were delayed from the previous year. There will also be some who leave medicine during the year. We use the term " drop-out " to mean the difference between the number of those entering medical education in a given year and the number graduating five years later. Drop-out is not identical with wastage.

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[*] Actual grades attained in examinations were not available, but as the examinations were mainly internal they would not have been strictly comparable anyway. Therefore, achievement was classified as the percentage of major examinations passed at first sitting, i.e., no failures, one failure, two failures and three or more failures. This classification is very limited as a measure of ability. Throughout the survey we regretted the lack of a uniform measure of ability such as an intelligence test which would have enabled us to make more reliable and objective comparisons between students.

We calculated the drop-out for the final year 1966 to be 9·9%* of entrants domiciled in the United Kingdom. Study of the numbers of entrants and the figures given by the University Grants Committee of those actually qualifying, confirmed a drop-out rate of about 10%, constant for 1961/62 and 1966/67.

Using the 1961 census and the Registrar General's population estimates for the relevant years, we find an output of doctors per 10,000 population in Great Britain of:

0·31 in 1961/62
0·33 in 1966/67
0·37 in 1971/72

This represents an increase in output of 0·6 doctors per 300,000 population in the first five years and of 1·2 doctors per 300,000 population in the second five year period.

(*b*) *Area of permanent home of U.K. Students*†

The U.K. students in the 1966 survey were analysed according to the area in which their permanent homes were situated.

Knowledge of the areas from which students are currently drawn is relevant to the expansion of medical education and the siting of possible new medical schools.

Medical students coming from the different regions in Great Britain are not distributed proportionately to the populations in these areas. The main disproportion is in those coming from Scotland, East Anglia, and the " South East and London." In East Anglia the number of students entering medicine is relatively small and declining, although the proportional population of the area is rising. In Scotland the opposite is true. However, the most spectacular change in the proportion of students is in the " South East and London Region " where there was an increase of 3·2%. By contrast, in the North West region there was a decrease of 3·2%. The proportion of the population of Great Britain living in the London Region remained stable, while in the North West it declined.

Table 2A shows the number of entrants to medicine‡ per 10,000 population in each region.

TABLE 2A

Region	*Entrants to Medical School per 10,000 Population*			*Increase (+) or Decrease (−) in entrants per 10,000 population in 15 years*
	In 1956 for year '61/Final	*In 1961 for year '66/Final*	*In 1966 for year '66/First*	
S.E. & London	0·35	0·41	0·48	+0·13
East Anglia	0·32	0·26	0·24	−0·08
South West	0·35	0·26	0·48	+0·13
West Midlands	0·29	0·31	0·35	+0·06
N. & E. Midlands	0·26	0·23	0·39	+0·13
E. & W. Riding	0·29	0·38	0·37	+0·08
North West	0·36	0·37	0·35	−0·01
North	0·28	0·26	0·28	0·00
Scotland	0·55	0·63	0·80	+0·25
Wales	0·53	0·43	0·53	0·00
Total	0·36	0·39	0·45	+0·09
Total *n* = 100	1,792	1,958	2,403	

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* This figure was calculated from the figure given by the University Grants Committee for those entering Medical Schools in 1961.

† For this purpose the Ministry of Labour's regions were used. For the contents of the regions see Annex C.

‡ Adjustment has been made for the drop-out and 'no answers' in calculating entrants.

This table shows that the number of entrants per 10,000 population varies between regions. Furthermore, the rates are not constant for the three student years in question. In some regions where the rate was already higher than the average for Great Britain, there has been a further increase, especially in Scotland and in the " South East and London " region. In East Anglia where entry was already below the average for Great Britain, there has been a further decrease.

The differences in entry between the regions might be due to the following factors:

(*a*) A shortage of young people suitably qualified to enter university (i.e. school leavers with " A " levels) in the regions with a low rate of entrants to medical school.

(*b*) A smaller percentage of applicants for medicine among the suitably qualified; owing, perhaps to the absence of a local medical school or to a smaller representation of those social groups with which a high rate of application to medical schools is associated.

(*c*) Selection procedures in the medical schools themselves.

We consider each of these factors but on this question, as on many others, our lack of data concerning the unsuccessful applicants to medicine is a serious handicap.

Table 3A shows the numbers of possible University entrants.

TABLE 3A

Region	*School Leavers with 2 or more " A " levels in 1964/65**	*Entrants to medical school in 1966*	*School Leavers with 2 or more " A " levels per 10,000 pop. in 1964/65*	*Rate of Entrants to medical school per 1,000 leavers with 2 or more " A " levels*
S. E. & London	26,867	818	15·8	30·4
East Anglia	2,344	38	14·6	16·2
South West	5,740	175	15·8	30·5
West Midlands	5,630	175	11·2	31·1
East Midlands	4,530	130	13·7	28·7
E. & W. Riding	5,730	173	12·1	30·2
North West	8,830	238	13·1	27·0
North	3,720	91	11·2	24·5
Wales	3,740	144	13·7	38·5
Total	67,131	1,982	13·6	29·5

* The figures of " A " level takers by region are available only for 1964/65, and for England and Wales only. Therefore Scotland has been excluded from this table. The rates of " A " level takers in each region have been computed from the 1964/65 population estimates of the Registrar General. The rate of entrants to medical school has been computed from school leavers with " A " levels in 1964/65. Adjustments for 1966 Regional Divisions have been made both for total population figures and for school leavers with " A " level.

The regions with a low rate of entry to medical school per 10,000 population, notably East Anglia, do not all have a shortage of school leavers with " A " levels. East Anglia has the third highest rate of leavers with 2 or more " A " levels per 10,000 population.

Among the regions considered neither East Anglia nor the East Midlands regions have medical schools within the region. (Cambridge is situated in East Anglia, but due to its character it cannot be considered to be a local medical school). However, 28·7 out of every thousand school leavers with " A " levels from the East Midlands enter medical education, while 16·2 out of every thousand do so in East Anglia.

The absence of a medical school cannot entirely account for the low rate of students entering medical education from certain areas. It may be, however, that in the absence of a local medical school teachers will not encourage their pupils to enter medicine. *Table 4A* shows the encouragement given by teachers in secondary schools with regard to the decision taken to become a doctor.

There was a divergence in the encouragement given by teachers in the various regions. East Anglia and East Midlands had the highest proportion of final year students who said that they were actively discouraged. Throughout the country first year students had

had less discouragement from teachers than those in the final year. The percentage of first year students receiving discouragement was highest in Scotland and East Anglia. More first year than final year students had received encouragement except in West Midlands, the North and Wales.

TABLE 4A—*Encouragement by Teachers*

Region	*Year (1966)*	*Encouraged*	*Discouraged*	*Neither*	*Total n = 100*
S.E. & London	Final	31·3	12·4	56·9	550
	First	34·0	6·9	59·1	756
East Anglia	Final	30·0	23·3	46·7	30
	First	34·3	8·6	57·1	35
South West	Final	40·8	11·7	47·5	103
	First	41·8	4·4	53·8	158
West Midlands	Final	35·5	13·2	51·2	121
	First	28·8	8·0	63·2	163
East Midlands	Final	27·5	15·9	56·6	69
	First	39·2	4·2	56·6	120
Yorkshire	Final	29·8	12·2	58·0	131
	First	35·4	6·2	58·4	161
North West	Final	30·7	12·2	57·1	205
	First	33·2	7·3	59·5	220
North	Final	25·7	10·0	64·3	70
	First	23·8	8·3	67·9	84
Scotland	Final	19·1	9·7	71·2	267
	First	22·4	9·3	68·3	389
Wales	Final	34·0	10·6	55·4	94
	First	29·1	7·5	63·4	134

Later we show that the majority of students come from Social Classes 1 and 2. *Table 5A* shows the proportion of Social Classes 1 and 2 in the populations of each region and the proportion of school leavers entering full-time further education in each region.

TABLE 5A

Region	*% of Social Class 1 & 2 among the population 1961**	*% entering full-time education among school leavers 1964/65*
London & S.E.	20·4	18·7
East Anglia	20·6	18·4
South West	23·0	21·0
West Midlands	16·0	14·6
East Midlands	15·9	15·2
E. & W. Riding	15·2	16·8
North West	16·3	16·5
North	16·3	15·6
Scotland	17·6	figure not available
Wales	20·8	20·3

* Adjustments have been made to coincide with the new regional divisions.

East Anglia does not have a shortage of Classes 1 and 2. On the contrary, it is among the regions with a relatively high percentage of these classes, which is reflected in the relatively high proportion of school leavers who enter full-time further education.

Whatever the reasons may be (and we have no information on unsuccessful candidates from the various regions) East Anglia and to a lesser extent the East Midlands are contributing less to medical education than the other regions and could contribute more than they do now. A new medical school close to these two regions might well be well sited.

(c) *Type of community in which British students have lived*

Table 6A gives the distribution of year '66/Final and year '66/First according to the type of community they came from.

TABLE 6A

Type of Community	*Year '66/Final '61/First*	*Year '66/First*	*General Pop. Census 1961*
Isolated rural area	3·9	2·7 }	20·0
Villages	13·0	13·9 }	
Small towns (Pop. Less than 50,000)	25·0	25·9	20·3
Large towns (Pop. at least 50,000)	51·6	47·6	59·7
Combination of more than one	6·5	9·9	—

The differences in proportions between the two years may reflect general demographic changes due to the overspill from large towns to the surrounding rural areas. This is probably mainly affected by Social Classes 1 and 2 which are the chief contributors to the medical student population.

II. SEX, AGE AND MARITAL STATUS

(*a*) *Sex*

TABLE 7A

Year	*% of women students entering medical education*	*% of women among new entrants to University*
1961/62	23·2	28·6
1966/67	21·9	29·4*

* Provisional figures supplied by U.G.C.

Medical education takes a smaller percentage of women than does university education as a whole.

The percentage of women entering medical schools fell between 1961 and 1966. When allowance is made for the Royal Free Hospital Medical School (excluded from the 1961 Survey) the decrease is 1·8%.

TABLE 8A

Year	*% of girls among Science Specialists**	*Proportion entering university†*	*No. entering medical school per 100 Science Specialist girls*
1961/62	21·5	39·1	19·2
1964/65	22·1	50·1	18·1‡

* Statistics of Education, Part 3, Dept. of Education and Science, H.M.S.O.

† Latest available figure.

‡ This figure was estimated by using 1964/65 total numbers of science specialists as a base and adding to it the estimated percentage increase for one year to get an approximate number of girl science specialists for the year 1965/66.

This table shows that the percentage of girls among "science specialists" has actually increased between 1961/62 and 1964/65, and there has been a considerable increase in the proportion of those girls entering university. The proportion entering medical education has gone down, but this may be true also for boys.

TABLE 9A

Year	*Sex*	*Encouragement by parents*	*Active Discouragement by parents*	*Encouragement by teachers*	*Discouragement by teacher*
'66/Final	Men	64·3	4·4	26·9	7·6
'66/Final	Women	66·7	10·2	35·2	22·7
'66/First	Men	63·9	3·9	30·2	5·0
'66/First	Women	61·4	7·1	36·6	13·4

This table shows that there was a significant difference in the encouragement given by both parents and teachers to girls and boys who succeeded in entering medical school.* Teachers and to a lesser degree parents, adopted a neutral attitude to boys but showed a more definite opinion as regards girls. It is possible that girls seek an opinion from their parents or teachers more often than do boys. The difference in the encouragement of boys and girls however is less in year '66/First than it is in year '66/Final.

We think it possible that the increase in the intake of girls in 1961/62 was due mainly to the poor grades obtained by many boys at the time. Unfortunately we were not able to obtain the actual grades achieved in "A" levels by the students surveyed. In neither year was there any appreciable difference between the boys and girls admitted in the average number of "A" levels they had obtained. Such difference as there was fell to the advantage of the boys. The girls had a slightly higher average number of "O" level passes. There was no appreciable difference between boys and girls in the pattern of "O" and "A" level passes. *Table 9A*, however, shows that the girls of Final Year 1966 had had to repeat examinations in 1st M.B. or G.C.E. significantly less often than the boys.

TABLE 10A

Sex	*Passed all subjects at 1st sitting*	*Had to repeat one subject*	*Had to repeat two subjects*	*Had to repeat all subjects*	*Total n = 100*
	%	%	%	%	
Men	73·6	18·1	5·9	2·4	1,172
Women	79·4	16·3	3·0	1·3	399
Total	75·1	17·6	5·2	2·1	1,571

TABLE 11A

College Group	*% of Women entering in 1961/62*	*% of Women entering in 1966/67*	*Difference in Percentage*
Scottish Colleges	26·0	25·5	−0·5
Oxford and Cambridge	12·7	17·0	+4·3
London	19·6	17·4	−2·2
Provincial Colleges	28·5	25·6	−2·9
Total	23·2	21·9	−1·3

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* We have no data on applicants who failed to gain admission.

It can be seen that in general the Scottish and Provincial Universities accepted a larger number of female students while Oxford, Cambridge and London accepted a much smaller number. However, the percentage drop has been highest in the provinces, making the percentage of women in these universities in 1966/67 comparable to that in Scottish Universities. The percentage of women in Oxford and Cambridge rose significantly to a level comparable to that in London. These figures however do not give the full picture owing to the necessary exclusion from them of St. Andrews, Charing Cross and the Royal Free.

(*b*) *Age*

Table 12A compares the average age on entry of *medical students* with that of all University entrants.

TABLE 12A

Year	*Average age on entry to Preclinical Study*	*Average age of all entrants to university in comparable years**
1957 '61/Final	20·18	19·28
1961 '66/Final ('61/First)	19·58	19·20
1966 '66/First	18·90	19·11

* Returns from Universities and University Colleges, H.M.S.O.

The average age on entry to preclinical studies has dropped by over one year between 1957 and 1966. Students entering in 1961 were on average 0·6 years younger than those who entered in 1957 and those entering in 1966 were 0·7 years younger than those of 1961. During the years the percentage of overseas students had fallen but although these remained older than the average age on entry those who entered in 1966 were about a year younger than those who entered in 1961 (men were 1·3 years younger, women were 0·96 years younger). The drop in the number of overseas students does not account for the drop in the average age on entry.

Since the abolition of compulsory service in 1958 there has been no change in the average age of the total university entry, but the preclinical medical students entering in 1961 and 1966 were younger than their medical predecessors and in 1966 they were younger than the national average age for university entrants by about three months. The preclinical students included those entering Oxford and Cambridge and Scottish schools (and overseas students) whose age of entry was higher than the medical average, and every year there were a few quite " elderly " students entering medicine. Therefore some medical students must have been entering at age 18 or earlier.

We found that the median age at which the students had decided to become doctors was 14 years for those in their final year (entering mainly October 1962) and 14·6 for those who entered in October 1966.

Table 13A shows the age of entry of boys and girls to medicine and to higher education as a whole.

TABLE 13A

Year of entry	*Medical Students*		*Total Student Population*	
	Average age for		*Average age for*	
	Men	*Women*	*Men*	*Women*
1956/57	20·32	19·65	* (19·28)	*
1961/62	19·64	19·08	19·29	18·98
1966/67	18·93	18·79	19·20	18·92

* No separate figures available for men and women.

In the 1956/57 medical entry, girls were on average about eight months younger than boys. In the total student entry of 1961/62 the girls were between three and four months younger than the boys but in the medical entry they were approximately seven months younger. In the 1966/67 medical entry there was little difference between the average ages of boys and girls.

Table 14A shows the differences in the average age on entry of overseas students; and of British Students according to the medical schools they entered.

TABLE 14A

Average year of age entry	*Overseas average age*		*English average age*		*Ox. & Camb. average age*		*Scottish average age*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
1961/62	21·50	20·00	19·05	19·05	19·29	19·38	19·82	19·09
1966/67	19·75	19·04	18·87	18·71	18·92	18·98	19·13	19·09

(*c*) *Marital Status*

Of the final year students of 1966 21·9% were married. 1% of students entering medicine in 1966 were married, a smaller percentage than in the entering class of 1962. Even allowing for this decrease in the married rate at entry we calculate that when the first year of 1966 graduates in 1971 24·6% of them will be married.

Of the final year students of 1966, a further 14·1% said they were engaged or intended to be married in the next 12 months. (The comparable figure for the " first year " students was 0·9%).

It would appear that married accommodation will be needed for between one third to a half of those graduating in the next few years.

Of the married students in the 1966 final year, 33·2% had children. (397 students, 132 having children).

III. PARENTAL OCCUPATION

We grouped the students of both years into the Registrar General's social classes on the basis of their detailed descriptions of their father's occupations.

Table 15A shows the distribution in the two years and includes the final year of 1961 from the results of the 1966 survey. There may of course have been a differential drop-out affecting the proportions left in the two final years.

TABLE 15A

	Soc. Class 1	*Soc. Class 2*	*Soc. Class 3*	*Soc. Class 4 & 5*	*Total n = 100*
Final Year 1961	34·5	34·4	27·9	3·2	1,638
Final year 1966	34·1	35·7	26·8	3·4	1,586
First year 1966	39·6	36·1	21·7	2·5	2,131
Percentage in Gen. Population Census 1961	2·8	15·5	49·9	31·8	26,968,770*

* Economically active population only.

Medicine draws extensively from children of fathers in Social Classes 1 and 2 and the proportion has increased. Comparison with the general student population is difficult. The only available figure is from the Report of the Robbins Committee on Higher Education. Their sample of 3,725 undergraduates in 1961 showed the proportion in Classes 1 and 2 was 59%. The 1961 Survey of some 9,500 medical students (in 6 different years) showed the proportion in Classes 1 and 2 was 73%.

Appendix 19

Table 16A shows the social class distribution in medical school groups.

TABLE 16A

	Class 1	*Class 2*	*Class 3*	*Classes 4 & 5*	*Armed Forces*	*Total n = 100*
Year '66/Final						
Scottish	27·9	34·0	32·4	4·7	1·0	402
Oxford and Cambridge	52·1	33·7	11·7	1·8	0·6	163
London	38·9	38·7	17·8	[illegible]	1·9	622
Provincial	23·4	35·6	36·3	3·4	1·3	609
Year '66/First						
Scottish	33·0	34·5	28·1	[illegible]	1·1	543
Oxford and Cambridge	51·0	36·6	7·4	2·0	3·0	300
London	44·5	36·9	14·6	0·9	3·1	811
Provincial	30·6	36·5	27·5	3·9	1·5	747

In 1961 Oxford, Cambridge and London drew proportionately more from Social Classes 1 and 2, Scotland and the Provinces more from 3, 4 and 5. The picture has changed a little however. In 1966 the total intake from Social Class 1 was greater than in 1961, accounted for by the Provinces, London and Scotland, while Oxford and Cambridge drew less than before from this class. Differences of intake between the medical school groups seem to be diminishing.

Our studies suggest that students from Social Class 1 achieve fewer O and A level qualifications than do the rest. On the other hand the average number of science A levels per student was lower (in both years) among students from Social Classes 4 and 5. The number of students having to retake premedical examinations was highest among Social Class 1 and lowest among Social Classes 4 and 5.

Table 17A shows the percentage of medical students with medically qualified fathers.

TABLE 17A

Years	*% with medical fathers*	*Number*
'61/Final	17·1	280
'66/Final	20·9	336
'66/First	21·2	461

The percentage and the number has increased.

Table 18A shows the proportions of students with medical fathers in the different medical school groups in the final and first years of 1966.

TABLE 18A

School Groups	*% in Final Year '66 with medical fathers*	*% in First Year '66 with medical fathers*
Scotland	16·0	17·7
Oxford and Cambridge	35·6	27·0
London	21·7	26·3
Provinces	12·9	14·0

There has been a considerable decrease in the percentage of doctors' children in Oxford and Cambridge medical schools but in all other groups the percentage has risen, particularly in London.

The percentage of students with fathers in general practice fell between Year '66/Final and Year '66/First.

	% of G.P's among Medical Fathers
'66/Final	49·4
'66/First	44·6

The reduction was proportionately comparable for all schools, except those in the provinces where there was a small increase. We do not know the application rates for the children of G.P's and specialists. There has of course been an increase in the proportion of consultants in the medical profession since 1961 and the decrease in the number of students with G.P. fathers may reflect this.

The children of doctors among the students of both years had fewer " O " and " A " level passes, but the same number of Science " A " levels as the children of other parents. There was no significant difference in " achievement " in premedical examinations, i.e. number of subjects failed. We do not know the number of " medical " applicants rejected.

IV. PREVIOUS EDUCATION

(*a*) *Type of Secondary School**

Table 19A shows the percentage of medical students in *English and Welsh medical Schools* drawn from each type of secondary school.

TABLE 19A

Type of Secondary School	*Year '66/Final*	*Year '66/First*
State	43·4	43·4
Grant Aided	21·5	22·1
Independent	30·7	31·2
Private	4·4	3·3
Total Numbers	1,363	1,827

Table 20A shows the percentage of medical students in *Scottish medical schools* drawn from each type of secondary school.

TABLE 20A

Type of Secondary School	*Year '66/Final*	*Year '66/First*
State	51·3	53·7
Grant Aided	24·0	23·6
Independent	16·8	14·4
Private	6·4	7·0
Other	1·5	1·3
Total Numbers	405	557

Over the five years there has been little variation in the proportions of students drawn from the different types of secondary school. Differences between Scotland and England and Wales may reflect the smaller number of independent schools in Scotland. The national pattern remains much as it was found to be in 1961 for all years of students then in medical school.

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* Grant aided (or direct grant) schools are partially self-supporting but receive grants from public funds. Independent (" public ") schools rely entirely upon fees and endowments and are recognised by the " Headmasters' Conference." Private schools rely on the same financial sources but are not recognised by the Headmasters' Conference. In this enquiry private schools include schools in other countries attended by children of British parents serving abroad.

Appendix 19

From "*Statistics of Education*" *Part* 3 (H.M.S.O.) we checked on the numbers of school-leavers with 1, 2, 3 or more "A" levels in 1961–62 and 1964–65 and on their secondary schooling.

Table 21A shows the distribution for those two years in England and Wales.

TABLE 21A

Type of Secondary School	*1961/62*		*1964/65*	
	Leavers with "A" levels		*Leavers with "A" levels*	
	2 or more	*3 or more*	*2 or more*	*3 or more*
State	68·3	68·3	71·5	70·9
Grant Aided	12·6	14·1	11·0	12·6
Independent	17·0	15·7	14·8	13·9
Private	2·1	1·9	2·7	2·7
Total	47,690	31,640	67,990	43,760

Both for leavers with 2 or more and for those with 3 or more "A" levels the percentage produced by state schools has risen and the percentage produced by grant aided and independent schools has fallen. The medical schools have continued to take (in England and Wales) more students from grant aided and independent schools than from state schools.

Table 22A shows that the pattern of intake from secondary schools varies in the different groups of medical schools.

TABLE 22A

Medical School Groups	*State*		*Grant Aided*		*Independent*		*Private*	
	66/ Final	*66/ First*	*66/ Final*	*66/ First*	*66/ Final*	*66/ First*	*66/ Final*	*66/ First*
Scotland	52·1	54·4	24·3	24·0	17·0	14·5	6·5	7·1
Oxford and Cambridge	18·0	23·9	21·1	25·2	57·8	48·8	3·1	2·1
London	35·2	38·0	19·1	19·7	39·9	38·5	5·8	3·8
Provincial	58·6	57·0	24·0	23·4	14·1	16·4	3·3	3·2
Total	45·4	46·0	22·1	22·5	27·6	27·3	4·9	4·2

As in 1961 (and before then) Oxford and Cambridge and the London schools took a higher proportion of independent school leavers than did the other medical schools. There has however been a tendency towards an increase in the percentage of state school leavers taken by Oxford and Cambridge and London, while in the provincial schools the percentage has fallen and the percentage of independent school leavers has risen.

While characteristic long-standing differences between the intake of the 4 "Groups" still remain, they are showing signs of ironing out. Not all students, however, are in the schools of their first choice, and comments added to the questionnaires indicated that a substantial number of those in the Provincial Schools had expressed a first preference for London schools . (See Annex D, Table 1).

During the past 5 years, major changes have taken place in the intake of certain individual medical schools. Irrespective of whether such change has been for better or worse, and we have insufficient data on which to judge, this can have resulted in the majority of students in a particular school having had a different type of secondary education than was the case five years ago. Alternatively a school where previously one section of students, with a particular type of secondary education, was numerically larger than any other, now has a student body equally representative of all types. This may be of some importance because, as we are able to show later, students themselves provide a significant educational force, being in some schools a major source of guidance to those in need of advice.

Academic Results and Secondary School

We grouped the number of " O " and " A " level passes into 4 categories. The percentage of students in each category and the type of secondary schooling they received is shown in *Table 23A*.

Group 1 = less or average number of O's and less or average number of A's.
Group 2 = more than average number of O's and less or average number of A's.
Group 3 = average number of O's and more than average number of A's.
Group 4 = more than average number of O's and A's.

TABLE 23A
" O " and " A " level group patterns

Type of Secondary School	*Year*	*% in Group 1*	*% in Group 2*	*% in Group 3*	*% in Group 4*
State maintained	'66/final	34·4	28·6	19·2	17·8
	'66/first	42·7	20·0	24·3	12·9
Grant Aided	'66/final	40·4	27·0	16·1	16·5
	'66/first	41·4	14·4	31·0	13·2
Independent	'66/final	36·7	34·5	13·8	15·0
	'66/first	43·4	17·8	23·4	15·5
Private	'66/final	44·6	26·8	7·1	21·4
	'66/first	40·0	20·0	28·3	11·7
Total	'66/final	36·8	30·0	16·3	16·8
	'66/first	42·6	18·1	25·6	13·7

In the 1961/62 entry there was a tendency for the " better " qualified to come from the under-represented types of school, but this was reversed in 1966/67.

Entering medical students had about the same number of science " A " levels irrespective of the type of secondary school from which they came. We have no data on grades.

TABLE 24A

Type of Secondary School	*Passed all at first sitting*	*Had to repeat 1 subject*	*Had to repeat 2 subjects*	*Had to repeat all*	*Total* n = 100*
State Maintained	79·5	14·9	3·9	1·7	691
Grant Aided	76·7	15·8	6·3	1·2	336
Independent	66·5	23·4	7·1	3·0	436
Private	81·7	12·2	2·4	3·7	82
Other	62·5	33·3	—	4·2	24
Total	75·1	17·6	5·2	2·1	1,569

* Includes Scottish students and excludes 'no answer' to exemptions.

Students from state schools had a significantly lower failure rate in their premedical examinations than did students from other types of secondary school. We do not know the levels of intelligence of the students and can only guess at the possibly different educational objectives of the different types of school.

In both the final and the first years, students coming from state schools included a slightly larger proportion claiming to have been actively discouraged by their teachers from entering medicine, than was found among those coming from other secondary schools.

(*b*) *Place of Pre-Medical Study*

Table 25A shows the places of study for each of the two years.

TABLE 25A

Place of Study	*Final Year Students*	*First Year Students*
Secondary School	52·5	64·2
University	24·1	21·0
School and University	10·3	5·9
School and/or Technical/Tutorial	13·1	8·9

There has been a considerable increase in the number of students completing their pre-medical studies at school. The percentage studying in each place were the same irrespective of the type of secondary school attended.

(*c*) *Performance in Pre-Medical Study*

75·1% of final year students passed all subjects at first sitting or were exempted by qualifications such as a degree.

We have no information on grades but we compared the number of " O ' and " A " level passes of medical students with those of the general school leaving population in England and Wales in the relevant years. We found that on the whole medicine drew from the better qualified groups, i.e. those with average or more than average numbers of " O " levels, and more than average number of " A " levels. There has been a remarkable increase in the number of entering medical students with an average number of " O " but more than average number of " A " levels (see Table 23A). This reflects the increasing number entering preclinical studies direct from secondary school.

We found a difference in the pre-medical performance of students coming from different regions of the country. Students from London and the South East had fewer who passed all subjects at the first attempt, and more who failed all subjects. Students from the West Midlands and the North included a more than proportionate number passing all at the first attempt and of one subject failures. This may reflect different standards in the different examining bodies. However, particularly in the case of those who attended public schools, the area of domicile may not have been the area of schooling.

Study of Subjects (*including Mathematics*) *other than Science*

We investigated the numbers of " A " level passes obtained by *English* students of both years in subjects (including mathematics) other than science.

Table 26A shows the percentage of English students with 1 or more " A " level passes in non-scientific subjects.

TABLE 26A

	Final Year	*First Year*
1 or more subjects	20·4%	25·2%
2 or more subjects	7·2%	9·5%
3 or more subjects	2·9%	4·0%

The percentage of students with " A " level passes in non-scientific subjects is greater in the first year, and over a quarter of students entering the English and Welsh medical schools in 1966 had at least one " A " level in a non-scientific subject.

Table 27A shows the various non-scientific subjects and the percentage in each medical school group of the total number of " English and Welsh " medical students who passed them at " A " level.

TABLE 27A

Subject	*Year*	*London*	*Oxford and Camb.*	*Provinces*	*Total passing at " A " level*
English	Final	50·8	5·3	43·9	57
	First	55·0	15·0	30·0	100
Modern Language	Final	63·2	10·5	26·3	38
	First	63·7	22·7	13·6	44
Maths	Final	31·5	17·3	51·9	127
	First	35·2	33·2	31·6	193
Classics	Final	43·8	37·5	18·7	16
	First	53·1	34·4	12·5	32
History/ Geography	Final	46·2	17·9	35·9	39
	First	63·4	15·4	21·2	52
Other: e.g. Art/ Economics	Final	33·7	11·2	55·1	98
	First	26·0	22·1	51·9	231

It will be seen that the total number of students obtaining an " A " level pass has increased over the five years in every subject, even including Classics. The greatest increases are in " Other Subjects " and in English. The number obtaining an " A " level in Classics has doubled, but is still small.

Five years ago (when the final year students entered) the London schools took the largest number of those with " A " levels in English, Modern Languages, Classics and History. The provincial schools took the majority of those with " A " levels in Maths and " Other Subjects." Oxford and Cambridge took the smallest percentage of those with " A " levels in all non-scientific subjects except Classics, of whom they took less than London but more than the provinces.

In 1966 the London schools took the largest percentage of those with " A " levels in all but " Other Subjects," of whom the provincial schools took the majority. Oxford and Cambridge took a greater percentage than in 1961 of those with non-scientific " A " levels and more than the provincial schools of those with " A " levels in Modern Languages, Maths and Classics.

The general picture in England and Wales is of an increasing number of medical students with non-scientific " A " levels. The London schools admit the largest percentage of these. Oxford and Cambridge are taking more than they did, but the provincial schools are admitting a smaller percentage of students with " A " levels in these subjects, except for " Other Subjects."

It would appear that the often expressed fear that all medical students are too specialised too early has been somewhat overstated. It must be remembered that in addition to the English and Welsh students with " A " levels in non-scientific subjects, a majority of Scottish medical students have studied some non-scientific subjects up to Higher Leaving Certificate standard. When passes in non-scientific subjects in the Scottish Leaving Certificate are added to " A " level passes, then 31·2% of all final year students had at least one pass, 19·2% had at least two, and 14·2% had at least three. 43·2% of all first year students had at least one pass, 23·4% had at least two and 16·8% had at least three.

Use of free time between 1st M.B. and entry

First year students were asked to state whether they had six months or more free time between completing entry requirements and admission to medical schools.

64·8% had less than six months.

35·2% (809 students) had six months or more.

These spent their time as shown:

	Number	*Percentage having 6 months or more*
Job in medical field in own country	149	18·4
Job in non-medical field in own country	223	27·6
Worked abroad as volunteer	51	6·3
Worked abroad otherwise	45	5·6
Travelled abroad for interest	66	8·2
None (mainly stayed on at school)	275	33·9
	809	100·0

There was a difference between the types of secondary school and the way those who had six months free spent their time. Students from state-maintained schools in the main stayed on at school: those from public schools went abroad as volunteers or for interest.

There was a parallel difference between students with medically qualified parents and those without. More students with medically qualified parents went abroad either for interest or as volunteers or to work in some other capacity.

SECTION B. THE COURSE AND THE STUDENTS' REACTION TO IT

I. PERSONAL FACTORS

(*a*) *Grants*

The final year students reported on the grants they were receiving in their final year. The size of the grant might have changed during the course and many students mentioned that it had done so. The first year students were not yet sure what their grants would be. They were asked their expectations.

TABLE 1B

	Final Year Students
Full grants	60%
Fees and part maintenance	21·1%
Grant towards fees only	10%
No assistance (including overseas students and those whose grant had been withdrawn the previous year)	8·9%

As would be expected from the social class distribution in the different medical school groups, the percentage of students receiving full or nearly full maintenance grants differed. It was highest in the provincial universities (66·8%) followed by Scotland with 60·1% and Oxford, Cambridge and London with 54·8%.

Of the first year students 52·3% said that they expected to receive a full or nearly full grant. 27·2% expected to have their fees paid and receive a small contribution to their living expenses. 12·7% expected to have a contribution towards fees and 7·5% expected to have no grant at all. Another 0·3% were not sure whether they would get a grant.

(*b*) *Living Arrangements*

TABLE 2B

Arrangements	*Final Year*	*First Year*
Flat, House or Room—own catering	44·8%	} 7·6%
Flat, House or Room—not catering for self	8·8%	
University Hostel	17·2%	39·8%
Lodgings	5·4%	28·5%
At home	21·0%	22·7%
Other arrangement	2·8%	1·4%

The bulk of the first year students were living in hostels (39·8%), lodgings (28·5%) or at home (22·7%). 86·4% of Oxford and Cambridge students were living in colleges. 29·7% of Scottish students were in hostels but 66% of Glasgow students were living at home and 8% in lodgings. In London 25·9% were living in hostels: Guy's (no hostel) and the London Hospital (hostel mainly for clinical students) had the lowest percentages of first year students living in hostels (8·5% and 4·1% respectively) and the highest percentage living in lodgings (45·7% and 56·2% respectively). Royal Free had the highest percentage living in rooms (22·5%) followed by Guy's (17·0%). 44·2% of students in provincial schools were in hostels.

The final year students showed a different picture which may be that of all clinical years. The London schools had by far the highest proportion living in hostels: 28·7% compared with 10·3% in Scotland and 8·7% in the Provinces. Only 12·3% of London students were living at home compared with 38·4% in Scotland and 20·4% in the Provinces. In Scotland 65·6% of Glasgow final year students were living at home and none in a University hostel, while at Aberdeen and St. Andrews 22·4% and 22·2% respectively were in hostels. The Welsh National School was exceptional among the " provincial " school group, with 39·1% of final year students in hostel accommodation. 87·0% of Bristol and 80·0% of Sheffield final year students were in rooms doing most of their own catering.

Not all the London medical schools maintain hostels and a considerable number of medical students in London must, at some stage of the course, be living in " multifaculty " halls of residence.

The 1961 Survey showed that students living in University hostels took a much greater part than others in social, athletic and cultural activities, both those organised by the University and those available outside. This was confirmed by the 1966 Survey. The supposition that medical students in London have less opportunity for extra curricular activities organised by the university than do those elsewhere receives little support from these Surveys.

(*c*) *Travelling Time*

The average time spent travelling to and from the medical school each day was 44 minutes for final year students and 47 minutes for first year students.

TABLE 3B

Average Travelling Time	*'66/Final*	*'66/First*
Less than 1 hour	78·8	74·8
1–2 hours	18·7	21·2
More than 2 hours	2·5	4·0
Total Students	1,777	2,397

Differences between schools are shown in Table 2 in Annex D.

(*d*) *Participation in College Life*

Table 4B shows the percentages of final year students according to the degree of their participation in three categories of college activity.

TABLE 4B

Activity	*Degree of Activity*				*Total* *n = 100*
	Frequently	*Occasionally*	*Seldom*	*Never*	
Sports	36·1	30·7	19·8	13·4	1,787
Social	51·9	37·1	8·6	2·4	1,786
Cultural	15·7	29·5	26·4	28·4	1,787

Social activities were the most frequently attended and only 2·4% of the students never took part in such activities. Cultural activities, e.g. music groups, drama club, were the least frequently attended. We studied also the degree to which students participated in activities outside those organised by the medical school. We found that there were very few students whose activities were exclusively outside the school.

Appendix 19

The students were asked to state in which year of their course they found it particularly difficult to attend extra-curricular activities. The following are the proportions who stated a particular period:

TABLE 5B

1st (pre-medical)	2·8%	4th (1st clinical)	3·1%
2nd (1st pre-clinical)	14·3%	5th (2nd clinical)	8·9%
3rd (2nd pre-clinical)	22·1%	6th (3rd clinical)	16·3%
		In more than 1 year	10·6%
		In none	21·9%

These figures suggest that on the whole the clinical years were less demanding on students' time than were the preclinical years. The most difficult year was apparently the year in which students had to take their 2nd M.B. examinations.

Over one-fifth of the students did not find any stage of the medical course so strenuous as to prevent them from participating in extra-curricular activities; as one of the students put it, " I never let medicine interfere with my interests." We found no very significant relationship between extra-curricular activity and achievement in the course, but in the main, the more active were also better achievers.

(*e*) *Students' Awareness of what was expected of them*

The final year students were asked to state whether at every stage of the course they knew what was expected of them. A majority of students stated that they did know what was expected of them. The proportion increased with the years, but two years stand out because of the relatively large number who stated that they did not know what was expected of them. Expectedly these were the 1st preclinical year (47·6%) and the 1st clinical year (36·4%).

The following table gives the proportion of students who did not know what was expected of them.

TABLE 6B

Year of course	*% not knowing what was expected of them Year '66/Final*
1st preclinical	47·6
2nd preclinical	21·4
1st clinical	36·4
2nd clinical	28·6
3rd clinical	11·6

The first year students were asked whether they had been told about the aims of the course and the nature of their next examination and given advice on the use of the library. *Table 7B* shows their response arranged in medical school groups.

TABLE 7B

Medical School Group	*How to use the library*	*Aims of the course*	*Nature of next exam.*
Scottish Schools	26·6	57·4	85·0
Oxford & Cambridge	38·7	58·2	66·2
London Schools	58·3	63·3	68·0
Provincial Schools	81·5	51·1	71·3
Total population year '66/First	55·8	57·5	72·8

This table shows that within six weeks of the course beginning only just over half had been officially informed of its aims. Little over half had had any instruction in the use of the library.

There were wide differences between individual schools, as shown in *Table 8B.*

TABLE 8B

Individual schools	*How to use the library*	*Aims of the course*	*Nature of next exam.*
Lowest percentage of students informed	14·4	20·8	37·3
Highest percentage of students informed	100·0	95·0	98·9

(f) Study Facilities

The great majority of students in both years claimed to be able to find room to work in the library. However we got the impression (based on comments) that very few of the final year students did use the library, or spent any considerable time in it. The first year students used it to a greater extent.

Final year students stated that, in addition to the library, they had a place to work in the following: 39·5% elsewhere in the university, 67·3% elsewhere in the medical school, 91·0% at the place where they were living, 33·9% in the hospital, and 23·2% somewhere else including the parental home (when not living there), public libraries and public transport. First year students mentioned that they had a place to study in their residence (90·5%), at the university (56·0%), at medical school (77·6%) or elsewhere (25·2%).

Final year students were asked to state the place where they did most of their private studying during the clinical years. 75·7% said it was done at place of residence, another 11·0% said at the medical school, 3·7% at the teaching hospital, 4·5% in some part of the university and 5·1% elsewhere or equally at home and at university.

Single students and married students with children adhered to the general pattern of place of study. However, married students without children were exceptional in the fact that a larger proportion of them (83·4%) did their studying mostly at home.

(g) Study Habits

TABLE 9B

Place of Study	*Study Habits*					*Total* *n* = 100
	For a fixed time most days	*Most days but not at fixed time*	*Intensively once or twice a week*	*Sometimes intensively, sometimes not at all*	*Study intensively only before major exams*	
At home	11·2	28·1	5·4	31·4	23·9	1,362
Medical School	8·1	24·2	8·1	34·3	25·3	198
Teaching Hospital	6·1	16·7	4·5	43·9	28·8	66
University	14·8	34·6	4·9	28·4	17·3	81
Other	5·4	32·3	7·5	29·0	25·8	93
Total	10·6	27·8	5·7	31·8	24·1	1,800

Table 9B shows that out of the alternatives offered to them, over one-third of the students claimed to study most days but not all at fixed times, about one-third to study intensively periodically and about one-quarter to study intensively only before major examinations. These proportions with small variations were similar wherever the study was done, with the exception that those who did most of their study in the teaching hospital included a notably lower proportion who studied most days (either at a fixed time or not).

TABLE 10B

Place of Study	*Average length of study period*
At home	2·64
At Medical School	2·55
At Teaching Hospital	2·47
At University	2·69
Other	2·57
Total	2·62 (approx. 2 hrs. 40 mins.)

This table shows that the average period of study was about 2 hours and 40 minutes. Those who on the average studied for shorter periods were those who did most of their studying at teaching hospitals and they also had the smallest percentage who studied every day. They seemed to constitute a group which spent the least time in private study.

Students who lived at home and in lodgings had more regular study habits than students who lived either in a university hostel or on their own in a room.

In general we expected the more regular and frequent the study habits, the shorter the average length of the study period. The next table shows the distribution according to study habits and average length of study period.

TABLE 11B

Study Habits	*Average hrs.*
Every day at fixed times	2·89
Every day but at no fixed time	2·36
Once or twice a week	2·48
Sometimes study intensively, sometimes do nothing	2·58
Intensive study only before major exams	2·91
Total	2·62

As was expected, the students who studied more frequently studied on the average for shorter periods than did those who studied least frequently, the differences between the two being about half an hour. However, those who studied every day at fixed times had the second highest average for length of study period. From comparison with the 1961 Survey we believe there has been an increase in the percentage of medical students with regular habits of study and devoting considerable time to it. Nonetheless the majority still seem to be very erratic in their private study and the hours spent are very few in total. They are unlikely to graduate with regular (and perhaps profitable) study habits firmly inculcated in them. Although we know nothing about the quality of private study, we show later a very significant relationship between regularity of study and achievement in passing examinations.

(*h*) *Aims of Private Study*

Here we refer to efforts to discover how the students tried to tackle the fragmented nature of medical knowledge. By far the greater majority (86·4%) tried consciously to combine the disciplines and integrate them into a whole; 13·6% tried to keep the disciplines consciously separate. This was the picture in most schools. Of the 13·6% who consciously tried to keep the discipline separate, the majority (68·7%) found it easy to do so. Of the 86·4% of students who consciously tried to integrate the different disciplines of medicine, over half (52·3%) found it difficult. We expected that wherever the teaching had been integrated the students would find less difficulty in integrating the disciplines in their own mind; this however was not the case and the proportions were similar in most medical schools, although there were a few exceptions.

Those who did a research project (and also those who wanted to do so but had no opportunity) definitely tended to try and integrate the disciplines to a greater degree than those who did not do a research project nor wanted to. Not all those who had done an honours course fell into that category.

Some teaching methods seemed to be more acceptable to those who tried to integrate the disciplines whether they found doing so easy or difficult. Those methods were practical classes, group discussions, seminars, working in wards, writing essays for tutors.

Some of the teaching methods were significantly more acceptable to the group which tried to integrate the medical disciplines and found it easy to do so, than to all other students. These methods were reading medical journals, clinical pathological conferences, working in out-patient departments.

Reading text books was more acceptable to those who tried to keep the disciplines separate in their minds than it was for those who tried to integrate them, though on the whole both groups rated this method highly.

Integration of subject matter is obviously necessary and the majority tried to achieve this. Those who had done research (including most of those doing an honours course) and those who wanted to do research stood out as a group who found it easier than others to achieve integration and who appreciated certain educational methods. Probably most, but certainly not all, the students in this group were in one way or another judged to be excellent students before they were offered research and/or an honours course. The fact that they seemed to learn more easily may be due to the special educational process to which they were exposed or to their own pre-existing ability. The effect of the special educational process on poorer students cannot be judged.

(*i*) *Working in Groups*

The final year students were asked both about the length of time they worked in one small group and about the manner in which the group was formed. 98% of the total number stated that they had worked in small groups at some stage. The proportion who had not had this experience reached 6·0% only in two schools.

35·8% of the total had worked in some kind of small group for less than one year. (This proportion was very varied among the medical schools from 1·7% to 70·2%). 63·2% had worked in a small group composed essentially of the same people from a period of one year (21·9%) to five years (2·6%). The average time worked in one group was 1·5 years. There was considerable variation between the medical schools. The longest average time worked in one group in any school was 2·8 years. The shortest average time worked in one group in any school was approximately ten months.

The methods of allocation to groups varied not only between medical schools but also within medical schools. The most common method was a joint choice by staff and students. 38·5% of all students who worked in small groups were allocated in such manner. 4·4% said that the groups were formed by chance or alphabetical order. 33·2% said that it was formed solely by staff direction and 23·9% said that it was formed solely by student choice. Most medical schools adopted a combination of these methods.

We found no association between studying in small groups and difficulty in learning medicine, or in forming relationships with patients, or in success in examinations. Nevertheless working mainly in a small group for several years in a long course is a most distinctive feature of British medical education, and is likely to have a marked effect on the educational experience of the students and perhaps on their development as individuals.

Students were asked to evaluate the size of " firms " during their clinical studies. Just over half of the students (54·0%) thought the size of the firms they worked in were about right, just less than half thought they were too large and only 0·6% thought they were too small. For technical reasons we were unable to ascertain the actual sizes. The eight medical schools in which the majority of students thought the firms were too large included representatives of each of the main school " Groups," two in Scotland four in London and two in the Provinces.

II. OPPORTUNITIES AVAILABLE

(*a*) *Opportunities for Research and/or Studying in Depth*

The students were asked to state whether they had themselves engaged in a research project. 26·9% said they had, 20·5% said that they would have liked to have done but were not offered the opportunity. 52·6% had no wish to engage in original research work whether the opportunity was offered to them or not. There was a significant difference between the medical school groups, with Scottish, London schools and Oxford having a larger proportion of students who engaged in research than did the provincial universities. The London schools included students who had done preclinical studies at Oxford or

Cambridge, and these may have done their research at that time. We do not know the nature of the " research " but it must certainly have been of a wide variety. There was considerable variation between the individual schools, with the proportion of students who had engaged in research ranging from 3% to 57%.

14·1% of all final year students had done an honours course in a preclinical subject. Another 16·6% would have liked to have done so. Almost half of those who had, and almost half of those who wished they had said they would have liked to have done an honours course in a clinical subject. 44·3% of the students who did not do an honours course in a preclinical subject wished to do so only in a clinical subject, but 36·5% of them did not want to do any honours course. *52·5% of all the final year students stated that they would have liked to have had an honours course in a clinical subject.*

(*b*) *First Degrees*

304 final year students (17·1%) already had a degree. Of these 15 had degrees obtained before the course began (see Section A). 289 had gained degrees (B.A's or B.Sc's) during the course: e.g. Natural Sciences Part I and II, Animal or Human Physiology, Special Anatomy, Pharmacology, etc. Of all the students who held degrees, 13·5% had first class honours, 69·1% had second class honours, 7·9% had third class honours and 9·5% took an ordinary and not an honours degree. The significant relationship between an honours degree and success in the medical course is described later.

(*c*) *Tutors and Regents*

62·5% of all final year students stated that they had a tutor or regent. The term " tutor " clearly had different meanings (and tutoring has different purposes) in different schools. In 10 schools, 80% or more of the students claimed to have a tutor, but in the remainder the percentage varied from 17·7% to 71·0%. The ten schools included two, Oxford and London Hospital, known to have long standing tutorial systems (with paid tutors), and in these two schools tutors were the largest source of guidance given. Of the remaining eight, only two were schools in which tutors provided the major source of guidance.

Tutorial systems in medical schools are clearly of different kinds, and are taken more seriously by the school and the students in some places than in others. Very few schools seem to have even a moderately adequate academic tutoring system. No British school appears to have the organised counselling service (for personal problems) that is to be found in most medical schools in North America.

(*d*) *Revision for Examinations*

Students were asked whether they were given organised revision for their major examinations. 22·4% of all students said that they had such revision for almost all of their major examinations. For the London schools as a whole the proportion was 38·6%, but there was a great difference between them. In the Scottish schools only 3·7% of the students stated that they had organised revision for all of their major examinations. In the provincial schools, the proportion was 13·5% and low in all schools except one. It seems likely that much organised " revision " in many subjects is given to students only after their failure in the examination in those subjects (see later).

(*e*) *Contact with Patients*

Students were asked when they had first come into contact with patients either by illustration of patients in class or by their own work with them.

Among all first year students 23·5% had already been shown a patient, but in six schools none had yet seen a patient.

For the final year students, the frequency with which they had been shown patients in the preclinical years was of course a recall question. On the average the preclinical studies had been illustrated with patients once a term, but in some schools most students had seen patients at least once a month. In one Scottish school 89% of the students claimed never to have seen a patient during the whole of their preclinical studies and in three London schools between 62% and 73% of students claimed the same.

Table 12B shows the year in which the students started to " *work with* " patients, and whether they would have preferred to start earlier.

TABLE 12B

Year Started	Number starting in each year	Percentage of these students who would have liked to start earlier
1st year after 1st M.B.	44	36·4
2nd year after 1st M.B.	851	39·5
3rd year after 1st M.B.	712	52·5
4th year after 1st M.B.	195	49·2

The surprisingly large number starting to work with patients in the 4th year after 1st M.B. (presumably 2nd clinical year) is explained by 1st M.B. and 2nd M.B. failures, and by students who took an extra " B.Sc." year or went to Oxford or Cambridge. Of the majority of students (851 students) who began clinical work with patients immediately after their 5 term preclinical course, only about two fifths would have liked to have begun earlier.

Difficulty of access to patients. Students were asked whether they had experienced difficulty in gaining access to patients outside teaching rounds. The majority of students (65·6%) stated that they had experienced no difficulty at all, another 31·1% said that they had only slight difficulty, and only 3·3% stated that they had great difficulty in gaining such access.

In one school as many as 12·1% of the students said that they had experienced great difficulty in gaining access to patients outside teaching rounds, and in another, 60·0% of the students said that they had some difficulty.

(*f*) *Visiting Patients at Home*

There was considerable difference between medical schools in respect of visiting patients at home as part of the organised studies; 39·4% of the total student population visited patients at home more than twice, 9·3% did so twice, 18·4% did so once and 32·9% did not do so at all. On the average, students visited patients at home 1·6 times. The Scottish schools as a whole had the largest proportion of students (39·2%) who had never visited patients at home.

As a group, the provincial schools had a very large proportion (46·3%) who visited patients at home, as part of their organised studies, more than twice. Some individual medical schools were exceptional at either end of the scale. In one, 93·3% of the students visited patients more than twice; 94·1% of the students in another had never visited patients in their homes. It was surprising (in view of recent criticisms) to find that over two-thirds (and the number would be higher but for Scotland and one or two other schools) of all students had visited patients in their homes at least once—and half at least twice.

(*g*) *Work in non-Teaching Hospitals*

Students were asked to state whether they had worked in non-teaching hospitals (other than for obstetrics) during their clinical studies and for how long.

68·5% of students stated that they had done so. This proportion was 75·3% for Scottish schools, 69·4% for the London schools, 65·0% for the provincial schools and 9·0% for Oxford. There was great variation among individual medical schools: from 9% to 98%.

On average, in the first clinical year, students worked about two weeks in non-teaching hospitals. This was about the same for all medical school groups with one exception. On the average, students worked for one month in non-teaching hospitals in the second clinical year and for about three weeks in the 3rd clinical year, giving a total average of *two months and ten days per student in the course of three clinical years.* Although London schools had a larger proportion of students who worked in non-teaching hospitals than did the provincial schools, the *average* time worked by London students was shorter—1·87 months in London, 2·88 months in the Provinces. The differences among individual medical schools were great.

The students were also asked whether the work in non-teaching hospitals was organised by their medical school or by their personal efforts or by a combination of the two. Of the 1,222 students who had worked in non-teaching hospitals, the proportions were as follows:

Organised by medical school	30·9
By personal effort	39·4
Combination of the above two	20·0
Student agency	4·7
Combination of the three	5·0

This shows that the students themselves took a very active part in organising work in non-teaching hospitals. The students' own efforts were considerably greater in Scotland where 80·3% of the experience was organised by students and another 10·0% by a student agency, and the Provinces with 38·2%, than in London medical schools where only 20·3% of work was organised by students themselves. The schools in London took a more active part in organising such work and 49·6% of attachments in non-teaching hospital were organised solely by the medical school and a further 26·4% by the joint efforts of the schools and the students. In general, more use of " non-teaching " hospitals by undergraduates appears to be being made than has been realised in many quarters, but *in an ad hoc fashion*. In addition of course, much teaching of obstetrics to undergraduates takes place in these hospitals.

(*h*) *Performance of Medical Procedures*

In general the particular medical procedures about which we asked were performed both in teaching and non-teaching hospitals. Students were asked to state whether they performed the procedure " more than once," " once," or " never " in each type of hospital. All procedures were performed more frequently in teaching than in non-teaching hospitals. Some were performed more often than others, and there were some that a proportion of students had never performed at all.

Table 13B shows the percentage of final year students who had performed the procedures named and whether they had done so once or more than once.

TABLE 13B

Procedure	*Percentage of students performing procedures*		
	Never	*Once*	*More than once*
Stitching a wound	5·4	2·5	92·1
Lumbar puncture	57·9	16·8	25·3
Abdominal or pleural paracentesis	78·6	13·1	8·3
Gastric Lavage	70·5	13·5	16·0
Measuring Patients' Haemoglobin	32·9	6·0	61·1
Measuring Patients' White Count	52·6	7·8	39·6
Measuring Patients' Blood Sugar	76·0	7·7	16·3
*Blood Transfusion/Intravenous Injection	12·2	5·2	82·6
Taking Blood Sample	1·1	0·5	98·4
Intramuscular Injection	22·6	8·8	68·6
Passing Catheter	29·2	15·8	55·0

* Inadvertently these two procedures appeared as though alternatives in the same question. The answers would appear to relate to intravenous injection.

Those procedures performed once or more by the great majority (more than ¾ of students) were:

Stitching a wound
Intravenous injection
Taking blood sample
Intramuscular injection

Those performed once or more by ½ to ¾ of the students were:

Passing a catheter
Measuring a patient's haemoglobin

Those performed once or more by ¼ to ½ of the students were:

Lumbar Puncture
Measuring patients' white count
Gastric Lavage

Those performed once or more by less than ¼ of the students were:

Measuring patients' blood sugar
Abdominal or pleural paracentesis.

This evidence on the degree to which final year students have performed the procedures named, confirms the fact that many aspects of vocational training which once took place in the undergraduate course have *already* been translated to the pre-registration year. Whether this has already been recognised by those under whom pre-registration house officers work and whether adequate arrangements for instruction in such procedures are universally provided is less certain.

There was very great variation among the medical schools in regard to the frequency with which students performed these procedures. It is difficult to recognise any clear policy in any school or group of schools in regard to participation by students in bedside or laboratory procedures. It looks very much as though what students do, or don't do, in almost every school is more a matter of chance than design. It is probable, however, that in many schools a particular department has firm views, and takes firm action, in these matters.

This evidence, and much other in this report, suggests that the geographical grouping of schools into Scotland, Provinces and London no longer tallies with the traditional major differences in the educational (or vocational) experience obtained by the student.

(i) *Other opportunities in clinical work*

Students were asked if certain opportunities were made sufficiently available to them.

Opportunities for Practice of Routine Bedside Technique

Nearly 80% considered they had had sufficient opportunity. 1·8% said that they had not. Another 19·5% stated that though available the opportunities were not sufficient. The medical schools fell into three groups with respect to opportunities for practising bedside techniques: in nine schools they were considered by the majority of students to be more than sufficient, in fifteen sufficient and in one insufficient.

Opportunities for Practice of Routine Laboratory Techniques

Over half the students (52·5%) stated that these opportunities were either not available or were insufficient. 41·5% said that the opportunities were sufficient and 6·0% said that they were more than sufficient. Here again there were differences between the medical schools, but with the exception of one where these opportunities were rated as being more than sufficient, the schools fell into two groups. In ten the opportunities were rated as sufficient by the majority of students and in fourteen not sufficient.

Opportunities for Observing what happens to Patients

Over half the students (56·7%) stated that there were sufficient or more than sufficient opportunities available. 37·5% said that they were available but not sufficient and 5·8% stated that they were not available. In the rating of these opportunities there were three medical schools where on the whole students stated that they were more than sufficient. In fourteen they were regarded as sufficient by the majority of the students and in eight less than sufficient.

Opportunities for taking clinical responsibility for the care of Patients

31·6% of the students stated that such an opportunity had not been made available to them, another 42·3% stated that the opportunity had been insufficient. 24·2% stated that such opportunities had been sufficient and 1·9% said that it had been more than sufficient. On the whole these opportunities were rated to be insufficient. Two schools were exceptional in that a majority of their students rated these opportunities as sufficient. Other schools fell into two groups, one (7 schools) in which the majority stated that opportunity was lacking or very rare and another (16 schools) in which the majority of students stated that it was insufficient. In relation to these opportunities all medical schools could be classified as follows:

1. Schools offering sufficient opportunity for practice of bedside and laboratory technique, for continued observation of patients and for taking clinical responsibility—two.

2. Schools offering sufficient opportunity for practice of bedside and laboratory technique and for continued observation of patients but insufficient opportunity for taking clinical responsibility—six.

3. Schools offering sufficient opportunity for practice of bedside technique and for continued observation of patients, but insufficient opportunity for the practice of laboratory technique and for taking clinical responsibility—nine.

4. Schools offering sufficient opportunity for practice of bedside and laboratory technique but insufficient opportunity for continued observation of patients and for taking clinical responsibilities—three.

5. Schools offering sufficient opportunity for practice of bedside technique but insufficient opportunity for the practice of laboratory techniques, for continued observation of patients and for taking clinical responsibility—four.

6. Schools offering insufficient opportunity for practice of bedside and laboratory technique, for continued observation of patients and for taking clinical responsibility—one.

If the classification is further summarised into three categories (1 and 2, 3 and 4, 5 and 6) medical schools from each of the main geographical groups appear in all of them.

Clinical students are probably not good judges of what constitutes a sufficiency of opportunity, but their opinion on insufficiency should be taken very seriously, particularly when they rate several opportunities as insufficient in their school.

(*j*) *Decisions about Patients*

Students were asked whether there were occasions on which they had taken a decision which could have affected the course of a patient's illness. Nearly two thirds had never taken such a decision. 3·1% of the students said that they had done so frequently (often as locums overseas), 35·7% did so occasionally. There was a great difference between the medical school groups in this respect. About half of the students in Scottish schools (49·2%), in Oxford (52·1%) and in the provincial schools (47·8%) said that they either frequently or occasionally had taken such decisions. For the London medical schools this proportion was 27·8%. With slight differences there was uniformity within the school groups.

Clearly British students have very little experience of making decisions about patients—at a time when the practice of medicine demands much skill and judgement in the making of decisions. The differences observed between medical school groups do not in fact reflect differences in the experience given by the schools to the students. The students themselves acquired this experience outside their teaching hospitals. In Scotland, where by tradition the training was held to be theoretical in comparison with London, more current students have been taking part in medical practice than in London but they have done so largely in holidays in hospitals of their own finding, in Britain and the U.S.A. Holidays in the clinical years are longer in most Scottish schools than in England and Wales.

III. REACTIONS TO THE COURSE

(*a*) *The Students' Reactions to the subjects*

All students were asked to evaluate a list of 18 subjects according to interest, usefulness and difficulty. All subjects were rank ordered on the basis of student appreciation, and the average value given to subjects depended on their evaluation only by those students who had actually studied them. Different ranks were worked out for interest, helpfulness and difficulty. One set of rank orders was based on the total participating student population and one rank order was made for each school.

Before dealing with the evaluation of subjects offered by all schools, we consider three that were offered only in some.

General Practice

By the total number of students who were "taught" in general practice it was ranked fourth in order of most interest, eighth for usefulness and fifteenth in order of difficulty (i.e. very easy). Opinions varied between schools. It was ranked as the most interesting subject in two but as low as tenth in another and ranked as the most helpful in one but eleventh in several others (including one with a department of general practice).

Statistics

Statistics on the other hand was considered dull (eighteenth and last in rank of interest), useless (seventeenth in the rank of helpfulness) and very difficult (first in degree of difficulty). This was true for all schools with the exception of Oxford where it was ranked of medium interest (ninth), of medium usefulness (ninth) and of great difficulty (first in degree of difficulty).

Psychology

This subject was considered to be rather dull (thirteenth), not useful (sixteenth) and not very difficult (twelfth). This was true for almost all schools. The students in five schools, although considering the subject uninteresting and useless, considered it as being of more than medium difficulty.

All subjects

In ranking all the subjects according to interest, usefulness and difficulty, we found that in general, subjects considered interesting were also considered useful and not difficult. On the basis of the ranks the subjects fell into five categories:

(1) Those interesting, useful and easy:
    Surgery, obstetrics and general practice.

(2) Interesting, useful but not so easy:
    Physiology, pathology, paediatrics and medicine.

(3) Of moderate interest, usefulness and difficulty:
    Psychiatry and microbiology.

(4) Dull, not very useful and not difficult:
    Social medicine, chemistry and psychology.

(5) Not very interesting, not very helpful and difficult:
    Statistics, physics, pharmacology and biochemistry.

Biology was interesting but not helpful, and very easy, while anatomy was rather dull, fairly useful and rather difficult.

We found *no* association between success or failure in examinations in these subjects and the students' rating of them.

(*b*) *Rating of Academic Standards*

Students were asked to give a simple rating of how they found the academic standards in their medical school; 84·4% of the students stated that in their opinion the academic standards were about right. 13·1% said they were too low and only 2·5% thought that they were too high. Thus on the whole the students felt that they could manage the course, leaving only a very few who thought that the course was above their ability.

This evaluation of academic standards was true for all medical school groups with slight differences. The main exceptions were Oxford and Cambridge students (including those doing their clinical work at Oxford) and those with a B.Sc.: only 72·7% of these considered the standard was about right and about 26% considered it was too low.

63·5% of the students said that medical knowledge was an acceptable mixture of theory and fact. 29·1% found it to be a large number of facts with too little co-ordinating theory. 7·4% thought that it was a large amount of theory based on too little concrete fact.

The students were also asked to state whether they found the acquisition of medical knowledge difficult. 3·9% found it very difficult, an additional 61·5% had moderate difficulty while 34·6% found it not difficult. The above proportions according to medical schools groups are as follows:

TABLE 14B

Medical School Group	*Proportion finding no difficulty at all*	*Proportion thinking*	
		(*i*) *acceptable mixture fact and theory*	(*ii*) *too much fact, not enough theory*
Scottish schools	33·4	69·5	23·3
Oxford	43·5	43·5	43·5
Oxford and Cambridge students in London schools	45·4	60·9	36·2
London schools	33·9	60·1	33·1
Provincial schools	32·1	66·8	24·4

London students experienced the same amount of difficulty as the students in Scottish or provincial schools. More Oxford students doing their clinical studies at Oxford, and Oxford and Cambridge students doing their clinical studies at other medical schools (mainly in London), seemed to find the course easy and proportionately more of them and of London students thought there was too much fact with too little theory involved. This proportion was smaller in the provincial medical schools. Students who had done an honours course constituted a group which was markedly different from others in the evaluation of medical knowledge, its difficulty and the academic standards offered by their schools;

more of them found the academic standards low, the acquisition of medical knowledge easy, and more of them evaluated medical knowledge as consisting mainly of too many facts with too little co-ordinating theory. They seemed to consider themselves capable of more than the medical course required.

(*c*) *Ease of establishing relationships with Patients*

Students were asked whether they had experienced difficulty in forming effective relationships with patients and if they still did so. 67·2% of the students stated that they had never had difficulty and 93·4% said that they had none now. Thus at the outset nearly one-third of the students had experienced some degree of difficulty but with the course the majority overcame this and in the final year there were only 6·6% claiming to have some difficulty and only 0·6% of those said that it was considerable. Those who experienced difficulty at the end were definitely the same who experienced difficulty before. This suggests that difficulty in forming effective relationships with patients is a matter of personality and although some manage to overcome it there is a small proportion who fail to do so.

(*d*) *Evaluation of " Teaching Methods "*

The final year students were asked to rank each of 12 " methods of teaching " in order of value. *Table 15B* shows this ranking and indicates the range of variation in ranking between the individual schools.

TABLE 15B

" *Method of Teaching* "	*Value—Rank order*	*Individual School ranking*	
		Highest	*Lowest*
Lecture	9	6	12
Practical Class	8	6	12
Group Discussion	4	2	6
Integrated Topic Teaching (where in use)	6	3	7
Clinico-Pathological Conference	7	5	10
Bedside Teaching	1	1	6
Working in Wards	3	1	6
Working in Outpatient Depts.	5	3	8
Medical Films	11	7	12
Reading Text Books	2	1	6
Writing Essays for Tutor (where used)	12	9	12
Research Work by Students	10	4	12

A striking feature is the high rank accorded to the value of bedside teaching. The only school where this did not occur (where the rank order was 6) had a high number of Oxford and Cambridge students and the highest proportion of students who felt that their clinical attendance and the quality of their clinical work went unnoticed. In the same school working in Out-patients was ranked high in value.

The first nine methods of teaching or learning are in relatively common use. Among them two (bedside teaching and work in wards) were considered to be of extreme value by the students. Three (group discussion, working in out-patient departments and integrated topic teaching) were considered to be of some value and three (lectures, practical classes and clinico-pathological conferences) were considered to be of little value. One, medical films, was rated to be of no value at all.

(*e*) *Boredom*

The students were asked to state whether in the course of their clinical years they had felt bored and/or inadequately employed for a period of two weeks or more in any of the clinical years. Over ⅔ had been bored or inadequately occupied at some stage. Only 31·0% stated that they had never been bored, 25·4% were bored for two weeks or more in one of the clinical years, 20·4% in two of the clinical years and 23·2% in all three of the clinical years. Similar results were found in 1961.

(*f*) *Status*

Students were asked to define their status in the medical school in terms of four alternatives; apprentices, observers, undergraduates or technical school students. 43·0% of the students regarded themselves as apprentices in a medical team, 31·6% passive observers of medical practice, 20·1% as university undergraduates and 5·3% as students at a technical school. In analysing these answers we found a number of students who said that at times they felt as apprentices in a medical team and at other times as passive observers of medical practice: in such cases we allocated them equally to these two categories. Students who had taken an honours course considered themselves in the main to be passive observers of medical practice rather than apprentices in a medical team.

(*g*) *Notice Paid to Attendance and Quality of Work*

The final year students were asked about the notice taken of their attendance and the quality of their work, both in preclinical and the clinical studies. About 76% stated that in the preclinical stage their attendance and the quality of their work were noticed. The proportion was similar in most schools but in a few was below 60%.

Regarding the clinical stage, 83·5% of the students stated that their attendance was noticed by the staff and 77·6% stated that the quality of their work was noticed. The proportions were similar for the medical school groups in both, but as regards attendance two in London had the highest proportion of students who said their attendance was not noticed (37·2% and 36·5% respectively). These two schools with the addition of two in other groups also had the highest proportion of students who stated that the quality of their work during the clinical studies was not noticed (41% to 46%).

(*h*) *Need for Guidance: Degree and Source of Help Given*

Final year students were asked whether at any stage they had needed guidance. About half (48·8%) stated that they had needed guidance. The proportion varied for the medical school groups. Although no specific type of problem was suggested the question followed that asking whether they knew what was expected of them in their studies.

TABLE 16B

School Group	*% stating that they needed guidance*	
Scotland	38·8	
Oxford and Cambridge	52·4	More than half
London	52·4	
Provinces	50·8	

The differences may possibly reflect the degree to which the curriculum varied between groups in the extent to which it indicated what had to be learned and when. Traditionally the Scottish schools have, for example, offered more lectures than those in London—with the provincial schools somewhere between the two. Interestingly the need for guidance in Scotland was highest in a school where the students had met a new curriculum and lowest in a school with a more traditional curriculum. In the Provinces the need for guidance ranged from 68% to 36% and in London from 63% to 35%.

Many factors must contribute to the rate of "need for guidance." They are likely to include: an inappropriate curriculum; a too rigid or too permissive curriculum, a change from a rigid to a more permissive curriculum (without an adequate advisory service), lack of agreement among the staff as to the objectives of education, and major changes in the composition of the student body. It is to be expected, however, that students (very varied in home and educational background and aged from 18 to 23) would naturally run into problems in a long and complex course making considerable emotional as well as intellectual demands upon them. A high "need for guidance" rate is therefore not necessarily an indication of anything unsatisfactory in a medical school. Perhaps what matters most is the effectiveness of the guidance given and the efficiency with which this necessary educational service is organised.

The majority of those who needed guidance stated that they had received it, but 18·1% of them claimed not to have done so. Schools varied greatly in this respect with proportions of students failing to get the help they needed varying from 2% to 43%. As many as 25% of the total final year in one school fell in the category of students needing but not receiving help. In other schools the proportion was 20%, 16% and (in several cases) around 10%.

Students were asked to state whether, if they had obtained guidance, they had got it mainly from the Dean or Sub-Dean, a Tutor or Regent, a departmental teacher or some other person. In the case of " other person " they were asked to state whom. Of all the students in all schools who got help, 40·7% got it mainly from other students, specifically stating so on their own initiative. Departmental teachers were another major source of help, tutors or regents provided much less and Deans and Sub-Deans least of all. In eight schools none of the final year students had at any time got guidance from the Dean or Sub-Dean. There was much variation between the schools, which fell into four categories according to the major source of the guidance given: Dean or Sub-Dean—one school. Tutor/Regent—5 schools; Departmental Teacher—8 schools; other students—11 schools.

An analysis of the need for guidance according to type of secondary school and whether students had been boarders showed that more of those who had been boarders and more of those who had been to independent schools felt that they needed guidance. *Table 17B* shows the proportions needing guidance in relation to type of secondary school.

TABLE 17B

Type of Secondary School	*Proportion needing Guidance*	*Total number attending each type n = 100*
State maintained	47·0	778
Grant aided	45·4	379
Independent	54·8	476
Private	45·3	86
Other	53·6	28
Total	48·8	1,747

Table 18B shows the proportion needing guidance among those who had been boarders and those who had not.

TABLE 18B

	Proportion needing Guidance	*Total number n = 100*
Boarders	52·8	498
Non-Boarders	47·2	1,244
Total	48·8	1,742

No relationship was found between the students' awareness of what was expected of them and the type of secondary school or boarding.

The first year students were asked whether they had been told where to go for help with academic or personal problems. The majority said they had.

IV. ACHIEVEMENT DURING THE COURSE

(*a*) *Criteria*

Achievement was measured in terms of whether the students passed certain examinations at first sitting or had to repeat them: being required to repeat part of the course was also considered a measure of achievement, or rather lack of it. Regrettably the actual grades obtained in examinations were not available.

The examinations noted were those concerning Anatomy, Physiology, Biochemistry, Pharmacology and Pathology. No account could be taken of examinations in any of the clinical subjects as few students had yet taken these.

At the time of administering the questionnaire, not all students had been examined in all the subjects mentioned. Allowance was made for this and the scale of achievement was built on the basis of the proportion of examinations taken and passed at the first sitting.

(*b*) *Results*

Table 19B shows the scale of achievement.

TABLE 19B

Achievement Scale	*Percentage of Final Year 1966*
Passed all at first sitting	60·6
Had to repeat one examination	19·1
Had to repeat more than one	20·3

Repeating the Course

80% of the students went through the course without being required to repeat part of it. 20% had to repeat some part of it.

(*c*) *Factors Affecting Results*

We have studied this rather inadequate measurement of achievement in relation to various background factors and in relation to various factors pertaining to the course itself.

(i) *Area of Domicile*

Of the students normally resident in Britain, 61·7% passed all of their examinations at the first sitting. This is a higher proportion than the total student population, showing that more overseas than home students fail to pass all of their examinations at the first sitting.

For British resident students " achievement " varied with area of residence. *Table 20B* gives the proportions who had to repeat their examinations according to area of residence (see Annex C).

TABLE 20B

Area of Residence	*% having to repeat one or more examinations after 1st M.B.*
London and South East	44·8
East Anglia	50·0
South West	43·4
West Midlands	37·5
East Midlands	44·3
Yorkshire	38·1
North West	37·7
North	30·1
Wales	42·6
Scotland	30·9

Individual schools tend to recruit from particular areas. Therefore the differences may well be due to the examining customs of individual schools rather than varying quality among students.

(ii) *Sex*

Table 21B gives the achievement scale for men and women.

TABLE 21B

Achievement Scale	*Males*	*Females*
Passed all at first sitting	59·1	64·7
Had to repeat one examination	19·4	18·1
Had to repeat more than one examination	21·5	17·2
Total n = 100	1,332	448

19·5% of the men and 18·8% of the women had to repeat some part of the course.* The reasons for being referred in the course were not the same for men and women. A greater proportion of men were required to repeat because of examination failure and unsatisfactory work: 90·1% of the men referred compared with 76·5% of women. A greater proportion of women were asked to repeat the course owing to absence resulting from ill health, 23·5% of women compared with 9·9% of men.

(iii) *Age and Marital Status*

Neither age, marital status, nor the possession of children significantly affected examination results.

(iv) *Type of Secondary School*

Table 22B gives the proportion of students from each type of secondary school who passed their examinations at the first sitting.

TABLE 22B

Type of Secondary School	*Proportion passed at first sitting*	*Total n = 100*
State-maintained	64·6	794
Grant-aided	60·4	389
Independent	54·9	483
Private	57·6	85
Total	60·7	1,751

A higher proportion of students who were successful to date came from the types of secondary schools from which recruitment was lower.

As regards repeating part of the course, there were differences ($P = 0·05$) between the types of secondary school.

TABLE 23B

State-maintained	17·4
Grant-aided	17·4
Independent	23·2
Private	19·5

(v) *Achievement in 1st M.B.*

Table 24B shows the proportions of students who passed all of the examinations according to achievement in the 1st M.B.

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* The difference is not significant ($P > 0·05$).

TABLE 24B

	% passing in all subjects at first sitting in the examinations after 1st M.B.	*Total n = 100*
Passed all subjects for 1st M.B. at first sitting	66·7	1,174
Had to repeat one subject for 1st M.B. at first sitting	47·6	273
Had to repeat 2 subjects for 1st M.B. at first sitting	32·5	80
Had to repeat all subjects for 1st M.B. at first sitting	34·4	32
Total	60·9	1,559

Success in 1st M.B. was associated with success in later examinations (Sig. $P < 0{\cdot}001$).

(vi) *Social Class of Parents*

Table 25B shows the proportions who passed all the subjects at first sitting, according to social class.

TABLE 25B

Social Class	*% passing all subjects after 1st M.B. at first sitting*	*Total n = 100*
Class 1	56·4	445
Class 2	67·4	469
Class 3	63·8	373
Classes 4 and 5	74·1	54

The proportion of those who passed all subjects at first sitting increases as the social class goes down. (Sig. $P < 0{\cdot}05$). 23·1% of the children of medically qualified parents and 18·5% of the children of others had to repeat some part of the course (Sig. $0{\cdot}05 > P > 0{\cdot}01$).

(vii) *Living Arrangements*

We found no association between achievement and housing, travelling time, or study facilities.

(viii) *Extra-Curricular Activities*

Participation in extra-curricular activities in college life was not clearly associated with achievement in the course although there was a tendency for the more active to do better in their examinations.

(ix) *First Degree and Research*

A comparison of achievement in the examinations noted with having a previous university degree showed a high association. Those with good honours degrees did much better (Sig. $P = 0{\cdot}001$). Those with third or fourth honours or an ordinary pass degree did no better than students without a first degree. 70·5% of those who had done research passed all examinations at first sitting, compared with 57·0% of those who had not (Sig. $P = 0{\cdot}001$).

(x) *Study Habits*

There was an association between achievement and study habits (Sig. $P = 0{\cdot}05$). This is shown in *Table 26B*.

TABLE 26B

Study Habits	*Proportion passing all exams at first sitting*
Study most days at fixed times	74·6
Study most days not at fixed times	62·1
Study intensively once or twice a week	69·8
Study intensively only before major exams	54·3

(xi) *Organised Revision*

Students who were given little or no revision did better than those who were given revision for all or most of the major examinations ($P > 0{\cdot}001$).

(xii) *Reactions to the Course and Achievement*

There was no association between achievement in these examinations and the students' evaluation of teaching methods, or of the degree to which their attendance or quality of work was noticed in preclinical or clinical studies. Nor was there any association between achievement and either boredom or the students' conception of their status.

As expected the majority of those few students who said the standards were too high had had to repeat one or more of their examinations (Sig. $P = 0{\cdot}001$). Similarly, there was strong negative association between the difficulty felt in the acquisition of medical knowledge and achievement (Sig. $P = 0{\cdot}001$).

SECTION C. CAREER AIMS

(The students' interest in different aspects of medicine, their plans for their future careers, their doubts about the rightness of their choice of medicine, their intention to visit or live overseas.)

I. THE MOST (AND LEAST) INTERESTING ASPECTS OF MEDICINE

Students of both the final and first years were asked which of certain aspects of medicine interested them most and least. This forced choice was particularly difficult for the first year students.

Table 1C shows the aspects of the greatest interest to the students of these two years.

TABLE 1C

	Aspects of Medicine					
	Social	*Psycho-logical*	*Physical*	*Responsi-bility for patients*	*Research*	*Total*
First Year	10·8	21·7	41·9	14·4	11·2	2,328*
Final Year	9·1	10·2	41·4	35·0	4·3	1,778

* 85 students stated they did not yet know their interests and these have been excluded from the percentage.

Over 40% of both first and final year students rated the physical aspects most interesting. Interest in taking responsibility for patients was greater among final year students. Whether the different percentage of first and final year students claiming to be most interested in psychological aspects reflects changing attitudes among those taking up medicine, or is an effect of the course, cannot be decided on our evidence. The same comment applies to their interest in research. The often expressed view that the undergraduate course is inclined to make students more interested in research than in the care of patients receives no support from these figures.

London schools as a whole showed a higher proportion interested in physical and in psychological aspects than in the Scottish and provincial schools. There was however much greater variation between individual schools in each area and it is not very likely that any particular influence is exerted by types of training that are peculiar to each " geographical " group of schools.

The high proportion of women at one school may account for the small proportion of students interested in taking responsibility for patients and the lack of interest in research This school however had the highest proportion of final year students (25%) claiming psychological aspects of medicine as the most interesting.

There was no association between the proportion of students interested in research and the proportion interested in psychological aspects but there was an inverse correlation between the former and those most interested in social aspects ($P = 0{\cdot}05$). One provincial school differed from all other schools in that no student in its final year rated psychological aspects the most interesting; the percentage of its students finding research most interesting was below the national average, but the percentage finding social aspects the most interesting was third highest in the country. The school with the highest percentage of students interested most in social aspects had only a small proportion (3·5%) interested most in research. *Table 2C* shows aspects of medicine of least interest to final year students.

TABLE 2C

Social	*Psychological*	*Physical*	*Responsibility for patients*	*Research*
21·4	13·9	2·6	3·8	58·3

Again differences among individual schools were interesting. For example, the school in which no student found psychological aspects the most interesting had the second smallest percentage least interested in research, the third largest percentage least interested in psychological aspects, the fourth largest percentage least interested in social aspects, and (except for Oxford) the largest percentage least interested in responsibility for patients. Oxford had the smallest percentage least interested in research and the largest percentage least interested in psychological aspects, but the size of the Oxford final year was so small that little reliance can be placed on these figures.

We found no association between aspects of interest and area of home residence, type of secondary school, medical qualification of parents or social class. However, a very much greater proportion of women students were interested most in the social aspects of disease, less in taking responsibility for patients and considerably less in research (Sig. $P = 0{\cdot}001$).

II. BROAD CAREER PREFERENCE

Students were asked to state their first preference in broad career categories. *Table 3C* gives the distribution of students in final and first years according to this preference.

TABLE 3C

	Basic Medical Science	*Medicine outside Hospital e.g. G.P.*	*Medicine in Hospital*	*Hospital Specialty e.g. Radiology*	*Hospital Lab. Spec. e.g. Microb.*	*Public Health and Admin.*	*Total*
Final Year	4·4	28·6	59·8	3·3	2·2	1·7	1,788
First Year	8·5	20·6	61·4	3·4	4·2	1·9	2,371

Twice as many first as final year students showed interest in the basic medical sciences and in laboratory specialties. Rather more first than final year students preferred a career in medicine in hospital. A significantly smaller proportion of first than final year students wanted to become general practitioners and the total number of first year students preferring this career was smaller than the total number of final year students. The figures in *Table 3C* above include under " medicine outside hospital " other careers beside general practice The precise figures of option for general practice itself (see later) were 23·5% of final and 16·3% of first year students in 1966. In the 1961 Survey, general practice was chosen as first preference by 27·4% of final and 21% of first year students. Even though in each study there have been more final than first year students interested in this career, this would seem to be due as much to higher proportions of students entering with this aim in the past as to change of preference during the course. Our studies do not suggest that a major effort on the part of a medical school to interest students in general practice results in a larger number choosing that career. The figures for one school with a department of general practice were the lowest in that school group and the second lowest among all the schools. Scottish students as a whole chose general practice less often than those in London, and London students less often than provincial (Sig. $P = 0{\cdot}01$).

There was a large sex differential in both first and final years: men more often choosing basic medical science and medicine in hospital, women choosing medicine outside hospital and public health (Sig. $P < 0{\cdot}001$). We found no significant association between achievement and career preference.

There was an association between career preference and what the students said they found most helpful in medical journals (Sig. $P = 0{\cdot}001$). More of those who intended to practise medicine outside hospital (e.g. general practice and those who preferred public health) found annotations, reports on new drugs and advertisements most helpful; while more of those who preferred the other career categories found review articles and research reports most helpful.

We found no relationship between study habits and career preference. However, there was a strong association between difficulty felt in acquiring medical knowledge and broad career preference (Sig. $P = 0{\cdot}001$). More of those who experienced difficulty opted for general practice and more of those who had no difficulty opted for basic medical sciences, a laboratory specialty or medicine in hospital.

There was an association between broad career preference and students' self-image ($P < 0{\cdot}001$). More of those who saw themselves as students in a technical college and those who saw themselves as university undergraduates opted for basic medical sciences and laboratory specialties, while more of those who felt that they were apprentices in a medical team opted for general practice. There was no relation between self-image and preference for medicine in hospital, medical administration or public health.

The proportion of students who considered bedside teaching adequate was the same among those who chose basic medical sciences, general practice and medicine in hospital, viz. 78·7%. A greater proportion of those preferring anaesthetics, radiology, microbiology and public health said this opportunity was either not available or insufficient (68·1% thought they had had adequate bedside teaching).

The same applies to opportunities for experience of routine laboratory techniques. Of those in the first three preference categories, 89·5% had adequate experience, but only 77·1% of those in the last three preference categories were of this opinion.

A larger proportion of would-be general practitioners than others thought opportunities to observe what happened to patients were not made sufficiently available. A smaller proportion of those who chose basic medical sciences (66·3%) and a relatively larger proportion of those who preferred a laboratory specialty (85·0%) said that opportunity for taking clinical responsibility for patients was insufficient. There was an association between career preference and difficulty in making contact with patients (Sig. $P = 0{\cdot}05$).

TABLE 4C

	Initial difficulty %	*Difficulty now* %	*Total* *n = 100*
Basic Medical Sciences, laboratory specialty	13·1	11·4	176
General Practice, Specialist Medicine in Hospital and Public Health	6·7	6·0	1,613

III. CHOICE OF CAREER IN MEDICINE

The discussion above referred to preference for certain broad fields of medicine. The students were also asked to state their first choice among particular careers in each field.

(*a*) *First Choices*

Table 5C shows a list of twenty-five careers and the proportion of students giving each as a first choice.

TABLE 5C

	Proportion in year '66/final		*Proportion in year '66/first*	
	%	*n*	%	*n*
Anaesthetics	2·0	35	1·5	36
Radiology/radiotherapy	0·8	15	0·3	8
Ophthalmology	1·2	21	0·8	16
Dermatology	0·7	12	0·3	8
Pathology	1·8	32	2·2	52
Ear, nose and throat surgery	0·5	9	0·5	11
Surgery (incl. neuro- and thoracic)	13·4	241	14·9	350
Traumatic and emergency surgery	2·7	48	1·6	38
Medicine in hospital (incl. cardiology and neurology)	15·0	269	15·2	360
Obstetrics/gynaecology	12·4	223	9·7	229
Paediatrics	10·8	193	9·6	226
Psychiatry	5·2	94	9·8	231
General Practice (single-handed)	0·7	12	1·3	30
General Practice (small partnership)	9·7	173	11·4	268
General Practice (large group health centre)	13·1	236	3·6	84
Basic Medical Science	1·1	19	1·4	34
Medical Research	1·6	28	6·1	144
Microbiology	0·3	5	0·5	12
Pharmaceutical Industry	0·1	2	0·3	6
Medical Administration	0·1	2	0·1	3
Public Health, Social Medicine	1·4	26	1·6	38
Forensic Medicine	0·1	1	0·9	21
Industrial Medicine	0·2	3	0·2	4
Armed Forces	2·8	50	2·8	66
Other	2·3	42	3·4	79
Total	100·0	1,791	100·0	2,354

For many careers there was not much difference between the proportions of the first and final year students who favoured them. Where there were differences it is important to remember that the first year students had been only a few weeks in medical school.

As in the study of broad fields of choice a markedly smaller percentage of first than final year students expressed a preference for general practice. The proportions were 16·3% of the first year and 23·5% of the final year. The interesting feature in this additional study is the preference for certain forms of general practice. Single-handed practice had little appeal. First year students favoured small partnerships more than did final year students. Senior students were most in favour of large group practices or health centres, while the juniors were much less so.

(*b*) *Differences between Medical School Groups*

Students in Scottish universities in both first and final years in 1966 more often preferred careers in surgery, obstetrics, psychiatry and paediatrics and less often preferred research and smaller specialties. In the final year a higher proportion of Scottish students preferred medicine in hospital and a smaller proportion preferred general practice, although in the first year these two careers were equally popular.

First year students at Oxford and Cambridge differed greatly from students in other schools, opting considerably more often than others for research and basic medical sciences, more often for medicine in hospital and very considerably less often for general practice and specialties such as anaesthetics and radiology. Final year preferences of Oxford and Cambridge students who completed their clinical studies in London and elsewhere showed a similar trend.

London students showed no tendency towards or away from particular specialties, save for ophthalmology, dermatology, and other smaller specialties which attracted a larger number (both first and final years) than they did elsewhere.

Students in provincial schools in both years showed greater preference for general practice and public health.

(c) *Career Choice and Background Factors*

(i) *Area of Domicile*

We found no clear association between career choice and area of residence.

(ii) *Type of Community*

We found no significant association between career choice and the type of community in which students lived at home, but there was a tendency for those coming from rural areas and villages to choose general practice more often than those coming from other types of community (Sig. $0{\cdot}1 > P > 0{\cdot}05$).

(iii) *Sex and Marital Status*

In both years women opted more often for general practice and paediatrics, while more men and less women opted for surgery; in the first year a larger proportion of women wanted to become obstetricians and gynaecologists but there was no difference for this preference in the final year. More first year women than men wanted to work in public health and more final year women than first year.

There was a very considerable difference in career choice according to marital status. Married students, with or without children, showed a greater preference than single students for the basic medical sciences and research ($P = 0{\cdot}001$). Less married than single students chose internal medicine in hospital; a smaller proportion of married students with no children chose paediatrics and psychiatry, and a smaller proportion of married students with no children chose surgery as a career.

The single students less often chose basic medical sciences and more often chose internal medicine, psychiatry and surgery.

(iv) *Type of Secondary School*

There was no association between career choice and type of secondary school attended.

(v) *Parental Occupation*

Among final year students there were no social class differences in career choice.

Among first year students an association ($P = 0{\cdot}01$) between social class (of fathers) and the following four career choice categories is shown in *Table 6C*:

TABLE 6C

Differential Career Choice	*Social Class*	
	Classes 1 and 2	*Classes 3, 4 and 5*
General Practice	15·4	19·1
Obstetrics/Gynaecology	9·1	12·2
Dermatology and Smaller Specialties	3·9	1·4
Medical Admin./Armed Forces	7·2	5·8
Total $n = 100$	1,743	551

(vi) *Medical Qualification of Parents*

There was an association (Sig. $P < 0{\cdot}01$) between medical qualification of parents and career choice for both first and final years. Students with medically qualified parents less often chose basic medical sciences and obstetrics and gynaecology, and more often chose anaesthetics, radiology and surgery. More first year students with medically qualified parents chose internal medicine, but less than the expected number of final year students with doctor parents chose internal medicine.

(vii) *Extra-curricular Activities*

There was a significant association ($P = 0{\cdot}001$) between career choice and participation of students in sport and social activities; but (in contrast to the findings in 1961) no association was found between career choice and participation in cultural activities.

TABLE 7C

Careers	% *Active in sport*	% *Active in social affairs*	% *Active in cultural affairs*	*Total n = 100*
Basic Medical Science	52·9	78·6	48·8	84
Internal Medicine in Hospital	66·2	90·7	42·2	269
General Practice	62·6	86·4	42·2	420
Paediatrics/Psychiatry	65·5	90·9	53·0	287
Anaesthetics/Radiology	50·1	89·8	42·0	50
Ophthalmology/Dermatology/ENT	64·3	85·7	52·4	42
Surgery	79·5	91·7	43·4	288
Obstetrics/Gynaecology	69·4	91·4	44·1	222
Public Health/Industrial Medicine	51·7	89·7	37·9	29
Medical Administration, Pharmaceutical Industry, Armed Forces	74·0	86·5	49·0	96
Total Student Population, Year '66/Final	66·8	89·0	45·2	1,787

(viii) *Career Choice and Study*

We found no significant association between study habits and career choice, nor between study methods and career choice. The career choice of those who had done an honours course is shown in *Table 8C.*

TABLE 8C

Career Choice	*Proportion who had done an honours course*
Basic Medical Sciences	37·4
Internal Medicine	19·6
Smaller Specialties	16·7
Psychiatry/Paediatrics	15·9
Surgery	14·8
Public Health/Industrial Medicine	10·3
Obstetrics/Gynaecology	9·9
Anaesthetics/Radiology	8·0
General Practice	7·8
Administration/Armed Forces	6·4

The proportion of those who would have liked to do an honours course in a clinical subject, if such an opportunity had been available, is shown in *Table 9C.*

TABLE 9C

Career Choice	*Proportion who would have liked to do an honours course in a clinical subject*
Surgery	63·3
Psychiatry/Paediatrics	59·3
Obstetrics/Gynaecology	58·0
Internal Medicine	57·8
Smaller Specialties	50·0
Armed Forces/Administration	46·8
Public Health/Industrial Medicine	44·7
Basic Medical Sciences/Pathology	42·2
General Practice	40·6
Anaesthetics/Radiology	32·0

There was an association ($P = 0{\cdot}001$) between difficulty felt in acquiring medical knowledge and choice of career. Less of those who chose basic medical sciences and internal medicine and more of those who chose general practice had experienced difficulty in learning.

There was an association between career choice and difficulty in forming effective relationships with patients, both initially and at the end of the course. The least amount of difficulty with patients (either at the initial stage or at the end of studies) was felt by those who chose general practice, followed by those who chose internal medicine and those who chose obstetrics and gynaecology.

(*d*) *Definiteness of Choice of Career in Medicine*

Table 10C shows the distribution of students in both years in 1966 and a sample from the survey of 1961.

TABLE 10C

Degree of Definiteness	*% in year '66/Final*	*% in year '66/First*	*% in sample of* 1961 *Final*
Definite	13·3	3·6	24·8
Inclined towards a certain field but not yet definite	54·5	45·3	55·6
Firmly decided against some fields but no definite choice	22·0	12·9	8·1
Quite undecided	10·2	38·1	11·5
Total $n = 100$	1,794	2,350	1,011

This confirms the trend observed in most schools over the past decade that few final year students are decided on their future career in medicine. Those with medically qualified parents were less definite about their choice than were the other first year students. In both years, women were less definite than men. Those choosing paediatrics, psychiatry and surgery were more definite than others (Sig. $P = 0{\cdot}001$).

IV. DOUBTS ABOUT MEDICINE AS THE RIGHT CAREER

(*a*) *Decision to Become a Doctor*

Students were asked about factors influencing their decision. An analysis was made only for first year students since these were recall questions and the short time lapse made their answers more reliable.

We found social class differences in the encouragement given by parents to students in their decision to become doctors ($P = 0{\cdot}001$). Students coming from Social Class 3 had relatively more encouragement and less discouragement or neutrality from their parents than did those from other classes.

Parental education was also associated with encouragement given by parents ($P = 0{\cdot}001$). Parents with a university education were more often discouraging or neutral. Parents with professional qualifications other than a university degree and parents with a secondary education were more often encouraging.

Table 11C shows the degree of encouragement given by medically qualified parents.

TABLE 11C
First Year Students

Encouragement	*% of students with medically qualified parents*	*% of students with non-medically qualified parents*
Encouraged	49·4	67·4
Discouraged	8·4	3·5
Neither	42·2	29·1
Total $n = 100$	559	1,835

Encouragement by teachers is shown in *Table 12C* and was discussed in Section A.

TABLE 12C

	Encouraged	*Discouraged*	*Neither*	*Total* *n = 100*
State-maintained	39·9	7·6	58·5	1,089
Grant-aided	27·2	7·4	65·4	537
Independent	31·8	5·5	62·6	650
Private	25·5	5·1	69·4	98
Total student population	31·5	6·9	61·6	2,374

Effects of Publicity

78% of first year students said that their decision to take up medicine had not been influenced by exposure to books, television or films.

Students were asked to assess the effect of press publicity about the conditions of doctors on their decision to become a doctor. 5·4% said that adverse publicity reinforced their decision, 9·1% said that it made them doubt their decision and the rest (85·5%) said it had no effect. In assessing these figures it must be remembered that we have no data on the deterrent effect of these media on those who decided not to take up medicine, or on those who applied and were rejected.

(*b*) *Doubts*

Students in both years were asked whether they had doubts about their choice of medicine as a career, and if so whether it was serious or slight. Final year students were also asked about factors contributing to their doubts.

(i) *Extent and Intensity of Doubt*

The proportions expressing doubt were as follows:

TABLE 13C

Intensity of Doubt	*% in year '66/Final*	*% in year '66/First*	*% in year '61/First*	*% in year '61/Final*
Grave Doubt	13·0	2·4	4·9	11·0
Slight Doubt	40·8	21·6	31·9	34·1
No doubt	46·2	75·9	64·2	54·3
Total *n* = 100	1,798	2,399	1,795	1,662

A considerably larger proportion of final than first year students expressed either grave or slight doubts. This could be a consequence of increasing maturity, but when we looked at the major reasons for doubt we found that the length of the medical course, examinations and the length of postgraduate study were frequently mentioned. Thus even if an increase in doubt is partly a natural outcome of maturity, some of it may well be due to the nature of the medical course itself.

Table 14C shows the proportions having grave or slight doubt in each medical school group.

TABLE 14C

Medical School Group	*% having doubt in year '66/Final*
Scotland	50·6
Oxford and Cambridge	57·7
London	55·8
Provinces	52·6

In both years, women were much more doubtful than men about their choice of medicine as a career.

There was a tendency for the better achievers to have less doubt. The same was found in 1961.

TABLE 15C

Proportions having grave or slight doubt in year '66/Final

Scale of Achievement	*% with doubt*	*n = 100*
Passed all at first sitting	50·9	1,020
Passed 65%–80% at first sitting	54·0	324
Passed 51%–65% at first sitting	58·7	121
Passed 25%–50% at first sitting	57·4	101
Passed up to 25% or none	63·5	137

Students choosing internal medicine in hospital, surgery (these had very little doubt and obstetrics and gynaecology were less doubtful than those choosing basic medica sciences, research, public health, medical administration and the armed forces ($P = 0{\cdot}001$)

(ii) *Factors Contributing to Doubts*

Questions concerning the factors contributing to doubts were asked only of the final year students. The question was asked in two parts, one requiring an examination of all the factors contributing to doubt and the second dealing with the main factor contributing to doubt.

There were ten factors which divided into three main categories:

(*a*) Those concerned with the course

(*b*) Those concerned with personal problems, and

(*c*) Those concerned with the rewards (conditions) of medical service.

A final open-ended question referring to other reasons has been analysed.

Table 16C shows the number of times each factor was mentioned and the proportion of the total responses. Since students were asked to tick as many factors as they liked, the total number of responses far exceeds the number of students with doubts.

TABLE 16C

Factors	*No. of Responses*	*% of Total Responses*
Length of course	323	13·9
Examinations	229	9·9
Period of postgraduate training	389	16·8
Difficulty in forming relationship with patients	34	1·5
Distaste for contact with illness and suffering	40	1·7
Dislike of having to take decisions affecting other people on inadequate data	148	6·4
Interest in another career	293	12·7
Financial difficulty	232	10·0
Evidence in press of dissatisfaction among some doctors with their conditions of service	313	13·5
Other factors	314	13·6

Of the " other factors " mentioned by students, the majority could in fact be classified into the three main categories given above. Accommodation in hospital was mentioned by 63 students.

Table 17C shows the factors causing doubt and the percentage of students with doubt who thought that each was the main cause in their own case.

TABLE 17C

Main Factor	% of students with doubts	
Length of student course Examinations Length of postgraduate training		42·2
Financial rewards of medicine	15·6	21·5
Conditions of service in medicine	5·9	
Difficulty in forming relationships with patients		15·3
" Other factors "—most of which could be broken down into categories named		12·6
Interest in another career		6·6
Distaste for contact with illness		1·5
Dislike of taking decisions on inadequate data		1·2

Men expressed doubt because of the length of postgraduate study and financial difficulties; women mainly because of the length of the present course and interest in another career.

Surprisingly perhaps, the single students more than proportionately stated financial difficulties as the main factor. The married students with or without children stated more than proportionately the length of the course.

There was an association (Sig. $P = 0{\cdot}001$) between first choice of career and the main factor contributing to doubt. Those who chose basic medical sciences and research, internal medicine and surgery worried less about the length of course and examinations, but more about finance and conditions of service. Those who chose general practice, paediatrics or psychiatry worried more about the length of the course and examinations.

V. INTENTION TO SPEND TIME ABROAD

The same proportion (12·1 %) of first year and final year students said that they definitely did not intend to spend any time abroad. Nearly half of the first year students and nearly two-thirds of the final year students had definite intentions of spending some time abroad, but the majority of these intended to settle permanently in Britain.

For the first year, we found significant differences among the medical school groups in intention to spend time abroad. A more than proportionate number of London and Oxford and Cambridge students intended to spend time abroad. Oxford and Cambridge students opted mainly for the U.S.A. or another developed country, while London students opted for a developing country. Students in Scottish schools were more than proportionately undecided both about whether they were going to spend some time abroad and, if so, about which country they were going to. Students in provincial universities least often planned to go abroad.

For final year students, differences between the medical school groups were slight.

Appendix 19

The views of students according to marital status are shown in *Table 18C*.

TABLE 18C

Marital Status	*% not intending to spend time abroad*	*% definitely intending to spend time abroad*	*Undecided*
Married without children	19·7	55·1	25·2
Married with children	15·9	58·4	25·7
Single	11·5	64·4	24·1

An analysis of intention to spend time abroad by intention to emigrate for both years showed a very strong association (Sig. $P < 0·01$). Those who did not intend to spend time abroad did not intend to emigrate, while those who intended to spend some time in a developed country often intended to emigrate or thought that they might do so.

The proportion of those who wanted to emigrate was also higher than expected for those who intended to spend some time in a developing country, but the difference was not so large (Sig. $P = 0·01$).

VI. INTENTION TO EMIGRATE

The students were asked whether or not they intended to settle permanently in Britain. Although this question was asked of all students, only the answers of the British students were analysed. Of the final year students, only 4·5% said that they definitely intended to emigrate, another 31·3% were undecided. The figures corresponded closely with figures on emigration of junior doctors (Last, 1967).

There was no difference between men and women first year students in regard to their ideas on emigration, but final year women students more often intended to settle permanently in Britain (Sig. $P = 0·001$).

More married students intended to settle permanently in Britain (Sig. $P = 0·05$).

Students from Social Classes 3, 4 and 5 were a little more decided to settle permanently in Britain ($P = 0·05$).

There was an association between career choice and intention to emigrate in both years ($P = 0·001$). Those who chose general practice, paediatrics and internal medicine were less likely to emigrate than those who chose basic medical sciences, psychiatry and obstetrics and gynaecology. Prospective surgeons were uncertain about emigration.

Reference

LAST, J. M. (1967) *Social and Economic Administration* 1 : 4 : 20.

ANNEX A

Strictly Confidential 1 2 3 4

For Statistical Purposes Only

Code No.

November, 1966

SURVEY OF MEDICAL STUDENTS

For the Royal Commission on Medical Education
carried out by A.S.M.E. and N.F.E.R.

THE QUESTIONNAIRE FOR STUDENTS IN THEIR FIRST YEAR AFTER THE COMPLETION OF FIRST M.B. OR ITS EQUIVALENT

(Please read each question fully ; only then answer as accurately as you can. Tick only one alternative unless you are requested to do otherwise)

For office use only

1. Name of Medical School.. **5, 6**

....

2. Full name of student (Block Capitals)

....
Surname **Other Names**

3. Year of Birth.. **7, 8**
4. Country of Birth.. **9, 10**
5. Country of Citizenship... **11, 12**
6. Sex (tick) **13**
   Male .... (1)
   Female .... (2)
7. Marital Status (tick the appropriate category) **14**
   Single (not engaged to be married within the next twelve months) ... ... (1)
   Single (engaged and contemplating marriage within the next twelve months) ... ... (2)
   Married without children ... ... (3)
   Married with children ... ... (4)
   Divorced ... ... (5)
   Widowed ... ... (6)

For residents of the U.K. only: others please pass on to question number 11.

8. In which county or borough is your permanent home? **15**

....

9. Was your first choice of medical school the nearest to your permanent home? (tick Yes or No) **16**
   Yes .... (1)
   No .... (2)
10. Are you at the Medical School of your first choice? (tick Yes or No) **17**
   Yes .... (1)
   No .... (2)

For office use only

To all students:

11. In which of the following have you spent at **least** half of your life so far? (tick the appropriate category) — 18
    Isolated rural area/s ... ... (1)
    Village/s ... ... (2)
    Small town/s (pop. under 50,000) ... ... (3)
    Large town/s (pop. 50,000 and over) ... . (4)
    In more than one of the above ... ... (5)

SECTION B

12. What is or was your father s occupation?
    (Describe what he does or did as fully as you can)..

    ....

13. The following are The Registrar General's Occupational Groups. Classify your father's occupation as precisely as you can into one of these groups. (tick the appropriate category) — 19
    (*a*) Socio-economic Group I : Professional, etc. occupations, e.g. University teachers, higher executives, company directors, lawyers, etc. ... ... (1)
    (*b*) Socio-economic Group II : Intermediate occupations, e.g. teachers, journalists, authors, civil service administrative officers pilots, managers, technicians, musicians, etc. ... ... (2)
    (*c*) Socio-economic Group III : Skilled occupations, e.g. accounting and costing clerks, craftsmen, foremen, shopkeepers, mineworkers, and other skilled workmen, etc ... . (3)
    (*d*) Socio-economic Group IV : Semi-skilled occupations, e.g. postmen and telephone operators, agricultural workers, etc. ... . (4)
    (*e*) Socio-economic Group V : Unskilled occupations, e.g. building and dock labourers, etc. ... ... (5)
    (*f*) Armed forces ... ... (6)
    (*g*) Cannot classify ... ... (7)

14. Has your father had : (tick the appropriate category) — 20
    (*a*) A Higher Education?
        University ... ... (1)
        Other professional training without university education ... ... (2)
    (*b*) A Secondary Education?
        Public School ... ... (3)
        Grammar School ... ... (4)
        Ordinary secondary ... ... (5)
    (*c*) An Elementary Education?
        Private Preparatory School ... ... (6)
        Ordinary elementary school ... ... (7)
    Do not know ... ... (8)

15. Is or was either of your parents medically qualified? (tick the appropriate category) — 21
    Yes, both of my parents ... ... (1)
    Yes, my father only ... ... (2)
    Yes, my mother only ... ... (3)
    No, neither ... ... (4)

15a. If yes, are you at the same Medical School as either of them? (tick yes or no) — 22
    Yes .... (1)
    No .... (2)

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15b. If either or both were medically qualified, are/were they mostly in (tick the appropriate category for each parent) **23, 24**

	Father	Mother
(*a*) General Practice?	.... (1)	.... (1)
(*b*) Specialist clinical practice?	.... (2)	.... (2)
(*c*) Other?	.... (3)	.... (3)
(*d*) Not medically qualified	.... (4)	.... (4)

SECTION C

16. Was your own secondary education **mainly** in: (tick the appropriate category) **25**

A state maintained school? ... ... (1)
A grant aided school? ... ... (2)
An independent public school? ... ... (3)
A private school? ... ... (4)
Other? Specify ... ... (5)

17. During your secondary education did you spend one or more years as a boarder? (tick yes or no) **26**

Yes .... (1)
No .... (2)

18. At what age did you leave school? (tick the appropriate category) **27**

Before the age of 15 ... ... (1)
At 15 ... ... (2)
At 16 ... ... (3)
At 17 ... ... (4)
At 18 ... ... (5)
At 19 ... ... (6)
After the age of 19 ... ... (7)

19. If you sat for a British G.C.E. O Level Certificate, how many passes did you obtain in subjects that fall into the following categories? (write the number of subjects for each category)

English **28**
Modern Languages **29**
Science **30**
Mathematics **31**
Classics **32**
History, Geography **33**
Other **34**

20. In how many subjects, that fall into the following categories, did you obtain 'A' or 'S' level passes or Scottish equivalents? (write the number of subjects for each category)

English **35**
Modern Languages **36**
Science **37**
Mathematics **38**
Classics **39**
History, Geography **40**
Other **41**

21. Have you already obtained a University degree in any subject? (tick the appropriate category and write in the subject) **42**

No .... (1)
Yes ....

If yes, what division honours did you obtain?
First... ... ... (2)
Upper Second ... ... (3)
Lower Second ... ... (4)
Third ... ... (5)
Pass ... ... (6)
What degree?..

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22. Do you already have some professional qualification, other than a University degree? (tick yes or no and write in the qualification) **43**

No .... (1)
Yes .... (2)

If yes, what qualification?..

SECTION D

23. Did you do your study for your first M.B. or get exemption from it (tick the appropriate category) **44**

At school? ... ... (1)
At a technical (or private tutorial) college? ... . (2)
At school and at a technical (or private tutorial) college? ... ... (3)
At university ... ... (4)
At school and at university? ... ... (5)
At a technical (or private tutorial) college **and** at university? ... ... (6)
At school **and** at a technical (or private tutorial) college **and** at university? ... ... (7)
Other? Specify.. .... (8)

24. If you had less than six months between completing entry requirements and entering medical school **45**

Tick here .... (1)

If you had six months or more how did you spend the **major** part of this time? (tick the appropriate category)

(*a*) Took a full or part time, paid or unpaid, job in the medical field, in your own country ... ... (2)
(*b*) Took a full or part time, paid or unpaid, job outside medicine in your own country .... (3)
(*c*) Travelled abroad for interest ... ... (4)
(*d*) Worked outside your own country as
  (*a*) a volunteer ... ... (5)
  (*b*) otherwise ... ... (6)
(*e*) None of these ... ... (7)

SECTION E

25. Do you have a grant? (tick yes or no) **46**

Yes .... (1)
No .... (2)

(If not please pass on to question 27)

26. Do you expect the grant to cover (tick the appropriate category) **47**

Part of the fees only? ... ... (1)
Part of the fees and a contribution to other study expenses? ... ... (2)
The fees only? ... ... (3)
The fees and a contribution to other study expenses? ... ... (4)
Fees and a small contribution to your maintenance? ... ... (5)
Fees and most of your maintenance? ... . (6)
Fees and full maintenance? ... ... (7)

For office use only

27. Are you now living (tick the appropriate category) **48**
    - At home? ... ... (1)
    - In digs? ... ... (2)
    - At a University Hostel, College or Hall of Residence? ... ... (3)
    - In a house, a flat, a bed-sitting room mostly eating out? ... ... (4)
    - In a house, a flat, a bed-sitting room doing your own catering? ... ... (5)
    - Other arrangements? ... ... (6)

28. What is the total time you spend travelling to and from the Medical School? (tick the appropriate category) **49**
    - Up to one hour ... ... (1)
    - Between one and two hours ... ... (2)
    - More than two hours ... ... (3)

29. Do you eat your midday meal in a university refectory or canteen? (tick the appropriate category) **50**
    - Almost every day ... ... (1)
    - At least twice a week ... ... (2)
    - Less than twice a week... ... ... (3)
    - No never... ... ... (4)

30. Can you usually expect to find a vacant seat in the Library? (tick Yes or No) **51**
    - Yes .... (1)
    - No .... (2)

31. Have you found in the following a satisfactory place in which to study? (tick Yes or No for each category)
    - (*a*) Where you live **52**
        - Yes .... (1)
        - No .... (2)
    - (*b*) In the medical school **53**
        - Yes .... (1)
        - No .... (2)
    - (*c*) Elsewhere in the university or college **54**
        - Yes .... (1)
        - No .... (2)
    - (*d*) Somewhere other than any of the above **55**
        - Yes .... (1)
        - No .... (2)

For office use only

32. Have you yet been told by a member or members of the staff: (tick Yes or No for each of the following)

(*a*) The aims of this year's courses? **56**
Yes .... (1)
No .... (2)

(*b*) The nature of your next examination? **57**
Yes .... (1)
No .... (2)

(*c*) About other aspects of your work on which you will be assessed? **58**
Yes .... (1)
No .... (2)

(*d*) The amount of personal work expected from you? **59**
Yes .... (1)
No .... (2)

(*e*) How to use the Library? **60**
Yes .... (1)
No .... (2)

(*f*) Where to get help with learning difficulties? **61**
Yes .... (1)
No .... (2)

(*g*) Where to get help with personal difficulties? **62**
Yes .... (1)
No .... (2)

33. Have you yet, as part of your course, been shown a patient? (tick Yes or No) **63**
Yes .... (1)
No .... (2)

SECTION F

34. In which of the following are you **most** interested? (select one only and tick) **64**
Learning about the social aspects of disease?... .... (1)
Learning about the psychological aspects of disease? ... ... (2)
Learning about the physical aspects of disease? ... ... (3)
Learning how to take responsibility for patients? ... ... (4)
Learning about research? ... ... (5)

35. In which are you **least** interested? (select one only and tick) **65**
Learning about the social aspects of disease?... .... (1)
Learning about the psychological aspects of disease? ... ... (2)
Learning about the physical aspects of disease? ... ... (3)
Learning how to take responsibility for patients? ... ... (4)
Learning about research? ... ... (5)

36. Have you decided on the nature of your eventual career in medicine? (tick the appropriate category) **66**
Yes, definitely ... ... (1)
Yes, I have inclinations towards a certain field, but have not finally decided ... ... (2)
No, but I have firmly decided against some kinds of work ... ... (3)
No, I am quite undecided ... ... (4)

For office use only

37. Whether or not you have made up your mind, what is your **first** preference, at present, among the following types of medical work? (select one only and tick)

67

- Basic medical science or original research ... . (1)
- Clinical practice outside hospital, e.g. general practice ... ... (2)
- Hospital or specialist work with continuing responsibility for patients ... ... (3)
- Hospital or specialist work without continuing clinical responsibility, e.g. radiology, anaesthetics ... ... (4)
- Hospital or specialist work of a laboratory nature, e.g. pathology, microbiology, biochemistry ... ... (5)
- Non-clinical work, e.g. public health, medical administration ... ... (6)

38. Below is a more detailed list of specialities in which a medical career can be pursued. Of this list, what at present is your **first** choice? (select only one and tick)

68, 69

- Anaesthetics ... ... (01)
- Radiology/Radiotherapy ... ... (02)
- Ophthalmology ... ... (03)
- Dermatology ... ... (04)
- Pathology ... ... (05)
- Ear, Nose, Throat Surgery ... ... (06)
- Surgery (including neurosurgery, thoracic surgery, etc.) ... ... (07)
- Traumatic and emergency surgery ... ... (08)
- Medicine in hospital (including cardiology, neurology, etc.) ... ... (09)
- Obstetrics/Gynaecology ... ... (10)
- Paediatrics ... ... (11)
- Psychiatry ... ... (12)
- General Practice (single-handed) ... ... (13)
- General Practice (small partnership) ... ... (14)
- General Practice (large group or health centre) .... (15)
- Basic medical sciences ... ... (16)
- Medical research ... ... (17)
- Microbiology ... ... (18)
- Pharmaceutical industry ... ... (19)
- Medical administration ... ... (20)
- Public Health, Social Medicine ... ... (21)
- Forensic medicine ... ... (22)
- Industrial medicine ... ... (23)
- Armed Forces ... ... (24)
- Other, specify.. .... (25)
- Non-medical work ... ... (26)

For office use only

39. Which of these is, at present, the **least** attractive? (select one only and tick) **70, 71**

Anaesthetics	(01)
Radiology/Radiotherapy	(02)
Ophthalmology	(03)
Dermatology	(04)
Pathology	(05)
Ear, Nose, Throat Surgery	(06)
Surgery (including neurosurgery, thoracic surgery, etc.)	(07)
Traumatic and emergency surgery	(08)
Medicine in hospital (including cardiology, neurology, etc.)	(09)
Obstetrics/Gynaecology	(10)
Paediatrics	(11)
Psychiatry	(12)
General Practice (single-handed)	(13)
General Practice (small partnership)	(14)
General Practice (large group or health centre)	(15)
Basic medical sciences	(16)
Medical research	(17)
Microbiology	(18)
Pharmaceutical industry	(19)
Medical administration	(20)
Public Health, Social Medicine	(21)
Forensic medicine	(22)
Industrial medicine	(23)
Armed Forces	(24)
Other, specify..	(25)
Non-medical work	(26)

40. After qualification do you intend to spend some time in another country? (tick the appropriate category) **72**

No	(1)
Yes, in the U.S.A.	(2)
Yes, in another 'developed' country, specify which	(3)
Yes, in a developing country	(4)
Yes, but have not yet decided in which country	(5)
Undecided	(6)

41. After qualification, whether you spend some time abroad or not, do you eventually intend to settle permanently in the British Isles? (tick the appropriate category) **73**

Yes	(1)
No	(2)
Undecided	(3)

SECTION G

42. At what age did you make up your mind that you wanted to be a doctor? (tick the appropriate category) **74**

Below the age of 13	(1)
13 to 15	(2)
16 to 18	(3)
Above the age of 18	(4)
Cannot remember	(5)

43. In deciding to become a doctor, did your school teachers **mostly**: (tick the appropriate category) **75**

Encourage you?	(1)
Discourage you?	(2)
Neither?	(3)

For office use only

44. In deciding to become a doctor, did your parents **mostly**: (tick the appropriate category) **76**
    Encourage you? ... ... (1)
    Discourage you? ... ... (2)
    Neither? ... ... (3)

45. In taking this decision, have books, films, T.V. programmes been: (tick the appropriate category) **77**
    A positive influence? ... ... (1)
    A negative influence? ... ... (2)
    Neither? ... ... (3)

46. There has been evidence, in the press and elsewhere, of dissatisfaction among some doctors with their terms and conditions of service. In regard to your decision to become a doctor, has this evidence: (tick the appropriate category) **78**
    Reinforced your decision? ... ... (1)
    Made you doubt your decision? ... ... (2)
    Had no effect? ... ... (3)

47. Now that you are a medical student, have you any doubts about your choice of medicine as a career? (tick the appropriate category) **79**
    Yes, serious doubts ... ... (1)
    Yes, slight doubts ... ... (2)
    No, no doubts at all ... ... (3)

80/1

Comments:

ANNEX B

Strictly Confidential **1 2 3 4**

For Statistical Purposes only

Code No.

October, 1966

SURVEY OF MEDICAL STUDENTS

For the Royal Commission on Medical Education
carried out by A.S.M.E. and N.F.E.R.

QUESTIONNAIRE FOR STUDENTS IN THEIR FINAL CLINICAL YEAR

(Please read each question fully; only then answer as accurately as you can. Tick only one alternative unless you are requested to do otherwise)

SECTION A

			For office use only
1.	Name of Medical School		**5, 6**
2.	Full name of student (Block Capitals) .... **Surname** **Other Names**		
3.	Year of Birth		**7, 8**
4.	Country of Birth		**9, 10**
5.	Country of Citizenship		**11, 12**
6.	Sex (tick the appropriate) ... ... Male	(1)	**13**
	Female	(2)	
7.	Marital Status (tick the appropriate):		**14**
	Single (not engaged to be married within the next 12 months)	(1)	
	Single (but engaged to be married within the next 12 months)	(2)	
	Married without children...	(3)	
	Married with children	(4)	
	Divorced without children	(5)	
	Divorced with children	(6)	
	Widowed without children	(7)	
	Widowed with children	(8)	

For Residents of the U.K. only: others please pass on to question 11.

8.	In which County or Borough is your permanent home (write name of the County or Borough)		**15**
9.	Was your first choice of Medical School the nearest to your permanent home? (tick Yes or No)		**16**
	Yes	(1)	
	No	(2)	

For office use only

10. Are you at the Medical School of your first choice? **17**
(tick Yes or No)
Yes.............. (1)
No .... (2)

To all students

11. In which of the following have you spent **at least** half of your life prior to becoming a Medical Student? **18**
(tick the appropriate category)
Isolated rural area/s ... ... (1)
Village/s ... ... (2)
Small town/s (pop. under 50,000) ... ... (3)
Large town/s (pop. 50,000 and over) ... ... (4)
In more than one of the above ... ... (5)

SECTION B

12. What is or was your father's occupation?
(describe what he does or did as fully as you can)
....
....

13. The following are The Registrar General's Occupational Groups. Classify your father's occupation as precisely as you can into one of these groups. (tick the appropriate category) **19**
(*a*) Socio-economic Group I: professional, etc., occupations, e.g. University teachers, higher executives, company directors, lawyers, etc. .... (1)
(*b*) Socio-economic Group II: intermediate occupations, e.g. teachers, journalists, authors, civil service administrative officers, pilots, managers, technicians, musicians, etc. ... . (2)
(*c*) Socio-economic Group III: skilled occupations, e.g. accounting and costing clerks, craftsmen, foremen, shopkeepers, mineworkers, and other skilled workmen, etc. ... . (3)
(*d*) Socio-economic Group IV: semi-skilled occupations, e.g. postmen and telephone operators, agricultural workers, etc. ... ... (4)
(*e*) Socio-economic Group V: unskilled occupations, e.g. building and dock labourers, other labourers, etc.... ... ... (5)
(*f*) Armed Forces ... ... (6)
(*g*) Cannot classify ... ... (7)

14. Has your father had: (tick the appropriate category) **20**
(*a*) A Higher Education?
University ... ... (1)
Other professional training without university education... ... ... (2)
(*b*) A Secondary Education?
Public School ... ... (3)
Grammar School ... ... (4)
Ordinary Secondary School ... ... (5)
(*c*) An Elementary Education?
Private Preparatory School ... ... (6)
Ordinary Elementary School ... ... (7)
Do Not Know ... ... (8)

15. Is or was either of your parents medically qualified? (tick the appropriate category) **21**
Yes, both my parents ... ... (1)
Yes, my father only ... ... (2)
Yes, my mother only ... ... (3)
No, neither ... ... (4)

For office use only

15a. If YES, are you at the same Medical School as either of them? (tick Yes or No) 22

Yes .... (1)
No .... (2)

15b. If either or both were medically qualified, are/were they mostly in: (tick the appropriate category for each parent) 23, 24

	Father		Mother	
(*a*) General Practice? ...	....	(1)	....	(1)
(*b*) Specialist clinical practice?	....	(2)	....	(2)
(*c*) Other?	....	(3)	....	(3)
(*d*) Not medically qualified?	....	(4)	....	(4)

SECTION C

16. Was your own secondary education **mainly** in: (tick the appropriate category) 25

A state maintained school? ... ... (1)
A grant aided school? ... ... (2)
An independent public school? ... ... (3)
A private school? ... ... (4)
Other? Specify .... (5)

17. During your secondary education, did you spend one or more years as a boarder? (tick Yes or No) 26

Yes .... (1)
No .... (2)

18. At what age did you leave school? (tick the appropriate category) 27

Before the age of 15 ... ... (1)
at 15 ... ... (2)
at 16 ... ... (3)
at 17 ... ... (4)
at 18 ... ... (5)
at 19 ... ... (6)
After the age of 19 ... ... (7)

19. If you sat for a British G.C.E. " O " Level Certificate, how many passes did you obtain in subjects that fall into the following categories? (write the number for each category)

English 28
Modern Languages 29
Science 30
Mathematics 31
Classics 32
History, Geography 33
Other 34

20. In how many subjects, that fall into the following categories, did you obtain "A" or " S " Level passes, or Scottish equivalents? (write the number for each category)

English 35
Modern Languages 36
Science 37
Mathematics 38
Classics 39
History, Geography 40
Other 41

For office use only

21. Have you already obtained a University degree in any subject? (tick the appropriate category and write in the subject) **42**

No .... (1)

Yes..............

If YES, what division Honours did you obtain?

First ... ... (2)

Upper Second ... ... (3)

Lower Second ... ... (4)

Third ... ... (5)

Pass ... ... (6)

What degree?..

22. Do you already have some professional qualification other than a University Degree? **43**

No .... (1)

Yes.............. (2)

What qualification? ....

SECTION D

23. Did you do your study for your first M.B. or get exemption from it: (tick the appropriate category)

At School? ... ... (1) **44**

At a Technical (or a private tutorial) College, etc.? ... ... (2)

At School **and** Technical (or private tutorial) College? ... ... (3)

At University (by internal M.B.)? ... ... (4)

At School **and** at University? ... ... (5)

At a Technical (or private tutorial) College **and** at University? ... ... (6)

At School **and** at a Technical (or private tutorial) College **and** at University? ... ... (7)

Other? Specify .... (8)

24. When you took your first M.B. did you pass the following subjects at your first sitting or subsequent sittings? (tick the appropriate category for each subject)

Physics: **45**

Passed at the first sitting ... ... (1)

Passed at a subsequent sitting ... ... (2)

Have not taken an exam ... ... (3)

Chemistry: **46**

Passed at the first sitting ... ... (1)

Passed at a subsequent sitting ... ... (2)

Have not taken an exam ... ... (3)

Those Biological subjects required by your University (Biology, Zoology, Botany) **47**

Passed at the first sitting ... ... (1)

Passed at a subsequent sitting ... ... (2)

Have not taken an exam ... ... (3)

Note regarding questions 25 and 26: If your University does not have examinations in single subjects but has interdisciplinary examinations only, answer Question 25 and do not answer Question 26.
If it does have examinations in single subjects, answer Question 26 and do not answer Question 25.

For office use only

25. If the examinations set by your University (not class examinations) are interdisciplinary, so that you could not pass or fail in a single subject (e.g. Newcastle, Sheffield), how many such examinations have you taken and how many did you pass at the first sitting? (tick the appropriate category) **48**

If taken **three** (i.e. Stage I, Stage II and Part One of Finals (Stage III))
- Passed all 3 at the first sitting ... ... (1)
- Passed 2 at the first sitting ... ... (2)
- Passed 1 at the first sitting ... ... (3)
- Passed none at the first sitting ... ... (4)

If taken **two**
- Passed both at the first sitting ... ... (5)
- Passed 1 at the first sitting ... ... (6)
- Passed none at the first sitting ... ... (7)

If taken **one**
- Passed it at the first sitting ... ... (8)
- Passed it at a subsequent sitting ... ... (9)
- Have not passed yet ... ... (10)

26. In your University (**not** Class or Conjoint or Apothecaries) examinations to date, did you pass the following subjects at the first or at a subsequent attempt? (tick the appropriate category for each subject)

	Passed at the first attempt	Passed at sub-sequent attempt	Taken but not yet passed	Not taken an exam. in this subject	
Anatomy... ...	.... (1)	.... (2)	.... (3)	.... (4)	**49**
Physiology ...	.... (1)	.... (2)	.... (3)	.... (4)	**50**
Biochemistry ...	.... (1)	.... (2)	.... (3)	.... (4)	**51**
Pathology ...	.... (1)	.... (2)	.... (3)	.... (4)	**52**
Pharmacology ...	.... (1)	.... (2)	.... (3)	.... (4)	**53**

27. During your career as a medical student, have you been required to repeat any part of the course? (tick the appropriate category) **54**

No .... (1)
Yes ....

If YES, was it mainly because:
- Of examination failure? ... ... (2)
- Of unsatisfactory work during term? ... . (3)
- Of absence due to personal ill health? ... . (4)
- Of other reasons? Specify ....

.... (5)

SECTION E

28. Do you have a grant? (tick Yes or No) **55**

Yes .... (1)
No .... (2)

29. Does your grant cover: (tick the appropriate category) **56**
- Part of the fees only? ... ... (1)
- Part of the fees and other study expenses? ... . (2)
- The fees only? ... ... (3)
- Fees and a contribution to other study expenses? .... (4)
- Fees and a small contribution to maintenance? .... (5)
- Fees and most of your maintenance? ... ... (6)
- Fees and full maintenance? ... ... (7)

For office use only

30. Are you living: (tick the appropriate category) **57**
At Home? ... ... (1)
In Digs? ... ... (2)
At University Hostel, College or a Hall of Residence? ... ... (3)
In a house, a flat, a bed-sitting room—mostly eating out? ... ... (4)
In a house, a flat, a bed-sitting room—doing your own catering? ... ... (5)
Other arrangements? ... ... (6)

31. What is the total time you spend travelling to and from the Medical School (or Teaching Hospital)? **58**
(tick the appropriate category)
Up to one hour ... ... (1)
Between one and two hours ... ... (2)
More than two hours ... ... (3)

32. Do you eat your midday meal in a University (or Hospital) Refectory or canteen? (tick the appropriate category) **59**
Almost every day ... ... (1)
At least twice a week ... ... (2)
Less than twice a week ... ... (3)
No, never ... ... (4)

33. Have you found the following a satisfactory place in which to study?
(tick Yes or No for each category)
(*a*) Where you live **60**
Yes............ (1)
No .... (2)
(*b*) The Medical School **61**
Yes............ (1)
No .... (2)
(*c*) The Teaching Hospital **62**
Yes............ (1)
No .... (2)
(*d*) Elsewhere in the University or College **63**
Yes............ (1)
No .... (2)
(*e*) Somewhere other than any of the above **64**
Yes............ (1)
No .... (2)

34. Can you usually expect to find a vacant seat in the Library? **65**
(tick Yes or No)
Yes............ (1)
No .... (2)

35. During your clinical years have you done most of your studying: **66**
(tick the appropriate category)
In the place you live? ... ... (1)
In the Medical School? ... ... (2)
In the Teaching Hospital? ... ... (3)
Some part of the University other than the Medical School? ... ... (4)
Elsewhere? ... ... (5)

36. Which of the following sentences **most** nearly describes your working habits, when not attending classes and at times when you are not near to major examinations? **67**
(tick the appropriate category)
I study most days at a fixed time ... ... (1)
I study most days but not at a fixed time ... . (2)
I study intensively about once or twice a week .... (3)
Sometimes I study intensively, but a week or more may pass without my studying seriously... ... . (4)
I study intensively only before major examinations ... ... (5

For office use only

37. Irrespective of how often or how regularly you study, how long is your usual study period? (tick the appropriate category) **68**
    Less than one hour ... ... (1)
    Between one and two hours ... ... (2)
    Between two and three hours ... ... (3)
    Between three and four hours ... ... (4)
    More than four hours ... ... (5)

38. During your career as a medical student did you take part in sports or other physical exercises? (tick the appropriate category) **69**
    Yes, frequently ... ... (1)
    Yes, occasionally ... ... (2)
    Yes, seldom ... ... (3)
    No, never ... ... (4)

39. During your career as a medical student, did you take part in social activities? e.g. Dancing, parties, meeting people, running clubs and societies. (tick the appropriate category) **70**
    Yes, frequently ... ... (1)
    Yes, occasionally ... ... (2)
    Yes, seldom ... ... (3)
    No, never ... ... (4)

40. During your career as a medical student, did you take part in socio-cultural activities? e.g. Music, literature, drama, debating, art, etc. (tick the appropriate category) **71**
    Yes, frequently ... ... (1)
    Yes, occasionally ... ... (2)
    Yes, seldom ... ... (3)
    No, never ... ... (4)

41. During your career as a medical student, in which of the following study years did the medical course interfere **most** with your wish to take part in any of these extra-curricular activities? (select the appropriate year and tick) **72**
    1st year (Pre-medical) .... (1)
    2nd year .... (2)
    3rd year .... (3)
    4th year .... (4)
    5th year .... (5)
    6th year .... (6)
    In none .... (7)

42. Were your extra-curricular activities **mainly**: (tick the appropriate category) **73**
    Within the University and/or the college and/or the medical school? ... ... (1)
    In clubs **not** pertaining to the university and/or college and/or medical school? ... ... (2)
    Equally in clubs not pertaining to the university **and** within the University? ... ... (3)
    In neither? ... ... (4)

SECTION F

43. Have you engaged in any research or original work during your career as a medical student? (tick the appropriate category) **74**
    Yes.............. (1)
    No ....
    If you ticked **No**, was this because:
    You wanted to but had **no** opportunity? ... . (2)
    You had the opportunity but did **not** wish to? .... (3)
    You **neither** wished to **nor** had the opportunity? .... (4)

For office use only

44. Had there been an opportunity to take an Honours Course in a **Clinical** subject, which of the following would **best** describe your position in respect of this? (select one and tick) **75**

(*a*) I have taken an Honours Course in a pre-clinical subject and would have **liked** to do one in a clinical subject ... ... (1)
(*b*) I have taken an Honours Course in a pre-clinical subject and would **not have liked** to do one in a clinical subject ... ... (2)
(*c*) I have not taken an Honours Course in a pre-clinical subject and would **have liked** to do an Honours Course both in a pre-clinical subject and a clinical subject ... ... (3)
(*d*) I have not taken an Honours Course in a pre-clinical subject and would have liked to take an Honours Course **only in a clinical** subject ... ... (4)
(*e*) I have not taken an Honours Course in a pre-clinical subject but would have liked to do so **only in a pre-clinical** subject ... ... (5)
(*f*) I have not taken an Honours Course in a pre-clinical subject and would **not have liked** to do so either in a clinical or a pre-clinical subject ... ... (6)

45. During your career as a medical student, what is the **longest** period you have worked in a small group composed of essentially the same students? **76**
(tick the appropriate category)
Not at all ... ... (1)
For less than a year ... ... (2)
For one year ... ... (3)
For two years ... ... (4)
For three years ... ... (5)
For four years ... ... (6)
For five years ... ... (7)

46. Was this group formed: (tick the appropriate category) **77**
By staff direction? ... ... (1)
By student choice? ... ... (2)
By staff direction and student choice? ... ... (3)
By other means? How? .... (4)
....
Did not work in a group ... ... (5)

47. In your opinion, was the number of students in your senior " firms " or clinics in the **main**: (tick the appropriate category) **78**
Too large? .... (1)
Too small? .... (2)
About right? .... (3)

48. As a clinical student, which of the following best describes the positions in which you felt yourself to be? (tick the appropriate category) **79**
A student of a " Technical School " ... ... (1)
A university undergraduate ... ... (2)
An apprentice in a medical team ... ... (3)
A passive observer of medical practice ... ... (4)

80/2

For office use only

SECTION G

49. Below is a list of some subjects of the curriculum.
How interesting, helpful to you in your studies and difficult did you find each of them?
(tick the appropriate categories, in each section, for each subject)

	Interesting	Not very interesting	Dull	Helpful	Not very helpful	Useless	Difficult	Not very difficult	Easy	*For office use only*
Anatomy	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**7, 8, 9**
Biochemistry	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**10, 11, 12**
Biology	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**13, 14, 15**
Chemistry	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**16, 17, 18**
General Practice	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**19, 20, 21**
Medicine	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**22, 23, 24**
Microbiology (Bacteriology)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**25, 26, 27**
Obstetrics	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**28, 29, 30**
Paediatrics (Child Health)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**31, 32, 33**
Pathology	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**34, 35, 36**
Pharmacology	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**37, 38, 39**
Physics	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**40, 41, 42**
Physiology	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (2)	..... (2)	..... (3)	**43, 44, 45**
Psychiatry	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**46, 47, 48**
Psychology	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**49, 50, 51**
Social (or preventive medicine)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**52, 53, 54**
Statistics, (Biometrics)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**55, 56, 57**
Surgery	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**58, 59, 60**

For office use only

50. At the start of each year of study (after 1st M.B. or its equivalent) did you have a pretty clear idea of what you were expected to achieve? (tick Yes or No for each year)

1st year after first M.B. Yes .... (1) **61**
No .... (2)

2nd year Yes .... (1) **62**
No .... (2)

3rd year Yes .... (1) **63**
No .... (2)

4th year Yes .... (1) **64**
No .... (2)

5th year Yes .... (1) **65**
No .... (2)

51. If you needed more guidance in finding out what you were expected to achieve, were you able to obtain it and from whom did you obtain **most** help? (tick the appropriate category) **66**

I did not need more guidance though it was available ... ... (1)
I did not need more guidance and it was not available ... ... (2)
I needed more guidance but was not able to obtain help ... ... (3)
I needed more guidance and I obtained most help from the Dean or Sub-Dean ... ... (4)
I needed more guidance and obtained most help from Tutor or Regent ... ... (5)
I needed more guidance and obtained most help from Departmental Teacher ... ... (6)
I needed more guidance and obtained most help from other persons
From whom?.. .... (7)

52. During your **preclinical** studies do you think any teacher noted: (tick Yes or No in each category)

(*a*) The regularity of your attendance? Yes .... (1) **67**
No .... (2)
(*b*) The quality of your work? Yes .... (1) **68**
No .... (2)

53. During your **clinical** studies, do you think any teacher noted: (tick Yes or No in each category)

(*a*) The regularity of your attendance? Yes .... (1) **69**
No .... (2)
(*b*) The quality of your work? Yes .... (1) **70**
No .... (2)

54. Has any member of the teaching staff at any time acted as your personal tutor, Regent or adviser? (tick Yes or No) **71**

Yes .... (1)
No .... (2)

55. If YES, did you regard him in the **main** as: (tick the appropriate category) **72**

A coach for examinations? ... ... (1)
An adviser on the medical curriculum? ... . (2)
An adviser on learning problems? ... ... (3)
An adviser on personal problems? ... ... (4)

56. As a medical student, have you found the academic standards: (tick the appropriate category) **73**

Too high? ... ... (1)
Too low? ... ... (2)
About right? ... ... (3)

For office use only

57. Have you found the acquisition of medical knowledge (as opposed to medical skills) difficult? (tick the appropriate category) **74**
Very difficult ... ... (1)
Moderately difficult ... ... (2)
Not difficult ... ... (3)

58. Have you found the knowledge of medicine, that you were required to learn, to contain: (tick the appropriate category) **75**
(*a*) A large number of facts with too little co-ordinating theory? ... ... (1)
(*b*) A large amount of theory based on too little concrete fact? ... ... (2)
(*c*) An acceptable mixture of theory and fact? .... (3)

59. Have you been given specially organised revision for your major examinations so far? (tick the appropriate category) **76**
Yes, for almost all ... ... (1)
Yes, for some ... ... (2)
Yes, for one only ... ... (3)
No, for none ... ... (4)

60. Were your preclinical studies illustrated by demonstrations on patients and how often? (tick the appropriate category) **77**
Yes, at least one a month ... ... (1)
Yes, less often than once a month but at least once a term ... ... (2)
Yes, less often than once a term... ... ... (3)
No, not at all ... ... (4)

61. In the years following your 1st M.B. or its equivalent, when did you yourself first begin to work on patients? (tick the appropriate category) **78**
In the first year after ... ... (1)
In the second year after ... ... (2)
In the third year after ... ... (3)
In the fourth year after ... ... (4)

62. Would you have preferred to begin earlier? (tick Yes or No) **79**
Yes.............. (1)
No .... (2)

63. During your clinical work, were the following opportunities made sufficiently available to you? (tick the appropriate answer for each category) **80/3**

	Were not made available	Were insufficient	Were sufficient	More than sufficient	
(*a*) Opportunities for practice of routine bedside techniques	.... (1)	.... (2)	.... (3)	.... (4)	**7**
(*b*) Opportunities for practice of routine laboratory techniques	.... (1)	.... (2)	.... (3)	.... (4)	**8**
(*c*) Opportunities for observing all that happens to your patients	.... (1)	.... (2)	.... (3)	.... (4)	**9**
(*d*) Opportunities for taking clinical responsibility in the care of patients ...	.... (1)	.... (2)	.... (3)	.... (4)	**10**

For office use only

64. In which of the following departments is or was your latest clinical appointment? (tick only one department) **11**

Surgery ... ... (1)
Medicine ... ... (2)
Paediatrics ... ... (3)
Obstetrics/Gynaecology ... ... (4)
Psychiatry ... ... (5)
General Practice ... ... (6)
Casualty ... ... (7)
Social Medicine (Public Health) ... ... (8)
Medical Speciality ... ... (9)
Surgical Speciality ... ... (10)
Anaesthetics ... ... (11)

65. In the clinical years have you worked as a medical student in a Regional Board or District Hospital (i.e. a non-teaching hospital) other than in obstetrics, and if so, for how long in each clinical year? (tick the appropriate answer for each year and write the number of months you have worked for—approximate to whole months)

	Have not worked	Worked for	
1st Clinical Year	.... (0)	.........months	**12**
2nd Clinical Year	.... (0)	.........months	**13**
3rd Clinical Year	.... (0)	.........months	**14**

66. If there were one or more occasions in which you have had hospital attachments, excluding obstetrics, in hospitals other than your teaching hospital, were those arranged: (tick the appropriate category) **15**

By your medical school? ... ... (1)
By your own effort and personal contact? ... . (2)
By a student organisation or agency? ... ... (3)
On one occasion by the medical school and in another occasion by personal effort and contact? ... ... (4)
On one occasion by the medical school and in another occasion by a student agency ... . (5)
On one occasion by personal contact and in another occasion by a student agency ... . (6)
I had no such hospital attachments ... ... (7)

67. In the course of your clinical work, have you ever made a decision that has affected the course of a patient's illness? (tick the appropriate category) **16**

Yes, frequently ... ... (1)
Yes, occasionally ... ... (2)
Not to my knowledge ... ... (3)
No, never ... ... (4)

For office use only

68. How often have you done any of the following and in what type of hospital? (tick the appropriate answer in each category and for each type of hospital)

	Teaching Hospital			Non-teaching Hospital			*For office use only*
	More than once	Once	Never	More than once	Once	Never	
(*a*) Stitched a wound ...	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**17, 18**
(*b*) Performed a lumbar puncture	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**19, 20**
(*c*) Performed an abdominal or pleural paracentesis	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**21, 22**
(*d*) Washed out a patient's stomach	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**23, 24**
(*e*) Measured a patient's haemoglobin ...	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**25, 26**
(*f*) Measured a patient's total white count ...	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**27, 28**
(*g*) Measured a patient's blood sugar ...	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**29, 30**
(*h*) Given a blood transfusion or an intravenous injection... ...	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**31, 32**
(*i*) Taken a blood sample	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**33, 34**
(*j*) Given an intra-muscular injection	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**35, 36**
(*k*) Passed a catheter ...	..... (1)	..... (2)	..... (3)	..... (1)	..... (2)	..... (3)	**37, 38**

69. As part of your organised studies, have you visited patients in their own homes and if so, how often? (tick the appropriate category) **39**
    Yes, more than twice ... ... (1)
    Yes, twice ... ... (2)
    Yes, only once ... ... (3)
    No, never ... ... (4)

70. Which of the following statements **best** describe your experience in gaining access to hospital patients outside teaching rounds? (tick the appropriate answer) **40**
    No difficulty at all... ... ... (1)
    Some difficulty ... ... (2)
    Considerable difficulty ... ... (3)

71. Have you had difficulty in establishing effective relationships with patients? (tick the appropriate category) **41**
    Considerable difficulty ... ... (1)
    Moderate difficulty ... ... (2)
    Slight difficulty ... ... (3)
    No difficulty at all... ... ... (4)

72. Are you now easily able to establish effective relationships with patients? **42**
    Yes, with most ... ... (1)
    Yes, with some ... ... (2)
    Not yet ... ... (3)

73. Have you had all the help you have wanted to form effective relationships with patients? (tick Yes or No) **43**
    Yes.............. (1)
    No .... (2)

For office use only

74. Which of the following sentences **best** describes your **personal** method of learning, in your last clinical year, the various subjects of clinical medicine, e.g. Pathology, Medicine, Ophthalmology, Surgery, etc.? (tick the appropriate category) **44**
    (*a*) I try my best to keep them in separate mental compartments and find it **easy** to do so ... . (1)
    (*b*) I try my best to keep them in separate mental compartments and find it **difficult** to do so .... (2)
    (*c*) I try my best to combine them and find it **easy** to do so ... ... (3)
    (*d*) I try my best to combine them and find it **difficult** to do so ... ... (4)

75. Have you had to apply the knowledge derived from several subjects of the curriculum to a specific problem? (tick the appropriate category) **45**
    Often ... ... (1)
    Seldom ... ... (2)
    Never ... ... (3)

76. If you had to, did you find this: (tick the appropriate category) **46**
    Difficult? ... ... (1)
    Easy? ... ... (2)
    Had no such experience? ... ... (3)

77. How valuable to your learning do you find the following? (tick the appropriate answer for each category)

	Extremely Valuable	Valuable	Of Little Value	Of No Value	Had No Experience	
(*a*) Lectures	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**47**
(*b*) Practical classes	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**48**
(*c*) Reading text books	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**49**
(*d*) Reading journals	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**50**
(*e*) Medical films ...	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**51**
(*f*) Group discussions/ Seminar	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**52**
(*g*) Bedside teaching	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**53**
(*h*) Integrated topic teaching ...	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**54**
(*i*) Clinico-pathological conferences ...	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**55**
(*j*) Working in the wards	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**56**
(*k*) Working in an Out-patients Department	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**57**
(*l*) Writing essays for a tutor	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**58**
(*m*) Your own research work	.... (1)	.... (2)	.... (3)	.... (4)	.... (5)	**59**

78. Have you found medical and scientific journals helpful to you in any way (tick Yes or No) **60**
    No .... (1)
    Yes ....
    If YES, what part of their contents have you found **most** helpful? (select one and tick)
    Annotations (Editorial Comment) ... ... (2)
    Review articles ... ... (3)
    Research reports ... ... (4)
    Correspondence ... ... (5)
    Reports on new drugs ... ... (6)
    Bibliography ... ... (7)
    Advertisements ... ... (8)
    Comments on doctors' conditions ... ... (9)
    Book reviews ... ... (10)

For office use only

79. In the last three clinical years have you felt either bored or insufficiently occupied for a continuous period of two weeks or more? (tick the appropriate category, taking the first year to mean the first of the last three clinical years) **61**
    - Yes, in each of the three years ... ... (1)
    - Yes, in each of the first two years, but not in the last year ... ... (2)
    - Yes, in each of the last two years, but not in the first year ... ... (3)
    - Yes, in the first and last year, but not in the second year ... ... (4)
    - Yes, only in the first year ... ... (5)
    - Yes, only in the second year ... ... (6)
    - Yes, only in the last year ... ... (7)
    - No, in none of them ... ... (8)

80. In which of the following are you **most** interested? (tick the appropriate category) **62**
    - The social aspects of disease ... ... (1)
    - The psychological aspects of disease ... ... (2)
    - The physical aspects of disease ... ... (3)
    - Taking responsibility for patients ... ... (4)
    - Doing research ... ... (5)

81. In which are you **least** interested? (tick the appropriate category) **63**
    - The social aspects of disease ... ... (1)
    - The psychological aspects of disease ... ... (2)
    - The physical aspects of disease ... ... (3)
    - Taking responsibility for patients ... ... (4)
    - Doing research ... ... (5)

SECTION H

82. Have you now decided on the nature of your eventual career in medicine? (tick the appropriate category) **64**
    - **Yes, definitely** ... ... (1)
    - **Yes,** I have inclinations towards a certain field but have not yet finally decided ... ... (2)
    - **No,** but I have firmly decided against some kinds of work ... ... (3)
    - **No,** I am quite undecided ... ... (4)

83. Whether or not you have made up your mind about your eventual medical career, what is your **first** preference, at present, among the following types of medical work? (tick the appropriate category) **65**
    - Basic Medical Sciences and/or original research .... (1)
    - Clinical practice outside hospital, e.g. General Practice ... ... (2)
    - Hospital specialist work with continuing responsibility for patients ... ... (3)
    - Hospital or specialist work without continuing clinical responsibility, e.g. Radiology, Anaesthetics ... ... (4)
    - Hospital or specialist work of a laboratory nature, e.g. Pathology, Microbiology, Biochemistry ... ... (5)
    - Non-clinical work, e.g. Public Health, Medical administration ... ... (6)

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84. As far as you can remember, what was your **first** preference when you first entered medical school? (tick the appropriate category) **66**

Basic Medical Sciences and/or original research .... (1)
Clinical practice outside hospital, e.g. General Practice ... ... (2)
Hospital specialist work with continuing responsibility for patients ... ... (3)
Hospital specialist work without continuing clinical responsibility, e.g. Radiology, Anaesthetics ... ... (4)
Hospital or specialist work of a laboratory nature, e.g. Pathology, Microbiology, Biochemistry ... ... (5)
Non-clinical work, e.g. Public Health, Medical administration ... ... (6)

85. Below is a more detailed list of specialities in which a medical career can be pursued. Of this list, what at present is your **first** choice? (tick the appropriate category) **67, 68**

Anaesthetics ... ... (01)
Radiology/Radiotherapy ... ... (02)
Ophthalmology ... ... (03)
Dermatology ... ... (04)
Pathology ... ... (05)
Ear, Nose, Throat Surgery ... ... (06)
Surgery (including Neurosurgery, Thoracic Surgery, etc.) ... ... (07)
Traumatic and Emergency Surgery ... ... (08)
Medicine in Hospital (including Cardiology, Neurology, etc.)... ... ... (09)
Obstetrics/Gynaecology ... ... (10)
Paediatrics ... ... (11)
Psychiatry ... ... (12)
General Practice (single handed) ... ... (13)
General Practice (small partnership) ... ... (14)
General Practice (large group or health centre) .... (15)
Basic Medical Science ... ... (16)
Medical Research ... ... (17)
Microbiology ... ... (18)
Pharmaceutical Industry ... ... (19)
Medical administration ... ... (20)
Public Health, Social Medicine ... ... (21)
Forensic Medicine... ... ... (22)
Industrial Medicine ... ... (23)
Armed Forces ... ... (24)
Other, please specify ... ... (25)

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86. Which of these is the **least** attractive? (tick the appropriate category) **69, 70**
   Anaesthetics (01)
   Radiology/Radiotherapy (02)
   Ophthalmology (03)
   Dermatology (04)
   Pathology (05)
   Ear, Nose, Throat Surgery (06)
   Surgery (including Neurosurgery, Thoracic Surgery, etc.) (07)
   Traumatic and Emergency Surgery (08)
   Medicine in Hospital (including Cardiology, Neurology, etc.) (09)
   Obstetrics/Gynaecology (10)
   Paediatrics (11)
   Psychiatry (12)
   General Practice (single handed) (13)
   General Practice (small partnership) (14)
   General Practice (large group or health centre) (15)
   Basic Medical Science (16)
   Medical Research (17)
   Microbiology (18)
   Pharmaceutical Industry (19)
   Medical administration (20)
   Public Health, Social Medicine (21)
   Forensic Medicine (22)
   Industrial Medicine (23)
   Armed Forces (24)
   Other, please specify (25)

87. After qualification, do you intend to spend some time in another country? (tick the appropriate category)
   No (1) **71**
   Yes, in the U.S.A. (2)
   Yes, in another "developed" country. Specify which (3)
   Yes, in a developing country (4)
   Yes, but have not yet decided in which country (5)
   Undecided (6)

88. After qualification, whether you spend some time abroad or not, do you eventually intend to settle permanently in the British Isles? (tick the appropriate category) **72**
   Yes (1)
   No (2)
   Undecided (3)

SECTION I

89. At what age did you make up your mind to study medicine? (tick the appropriate category) **73**
   Below the age of 13 (1)
   13 to 15 (2)
   15 to 18 (3)
   Above the age of 18 (4)
   Cannot remember (5)

90. In taking the decision to study medicine, did your school teachers **mostly**: (tick the appropriate category) **74**
   Encourage you? (1)
   Discourage you? (2)
   Neither? (3)

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91. In taking the decision to study medicine, did your parents **mostly**: (tick the appropriate category) 75
    Encourage you? ... ... (1)
    Discourage you? ... ... (2)
    Neither? ... ... (3)

92. In taking this decision have books, films, T.V. programmes been: (tick the appropriate category) 76
    A positive influence? ... ... (1)
    A negative influence? ... ... (2)
    Neither? ... ... (3)

93. Have you had any doubts about your choice of medicine as a career? (tick the appropriate category) 77
    Yes, serious doubt ... ... (1)
    Yes, slight doubt ... ... (2)
    No, no doubt ... ... (3)

94. If you have had any doubts, which of the following caused these doubts? (tick the appropriate ones) 78
    Length of student course ... ... (1)
    Examinations ... ... (2)
    The period of postgraduate training still necessary ... ... (3)
    Difficulty in forming relationships with patients .... (4)
    Distaste for contact with illness and suffering ... . (5)
    Dislike of having to take decisions, affecting other people, on inadequate data ... ... (6)
    Interest in another career... ... ... (7)
    Financial difficulties ... ... (8)
    Evidence in the press of dissatisfaction among some doctors with their terms and conditions of service ... ... (9)
    Other factors, please specify..
    .... (10)

95. Which of these was the **main** factor contributing to your doubts? (tick only one category) 79
    Length of student course ... ... (1)
    Examinations ... ... (2)
    The period of postgraduate study still necessary .... (3)
    Difficulty in forming relationship with patients .... (4)
    Distaste for contact with illness and suffering ... . (5)
    Dislike of having to take decisions, affecting other people, on inadequate data ... ... (6)
    Interest in another career... ... ... (7)
    Financial difficulties ... ... (8)
    Evidence in the press of dissatisfaction among some doctors with their terms and conditions of service ... ... (9)
    Other factors, please specify..
    .... (10) 80/4

ANNEX C

Ministry of Labour Gazette—January, 1966

STANDARD REGIONS FOR STATISTICAL PURPOSES

The Standard Regions for Statistical Purposes have been revised by the Central Statistical Office in agreement with other Government Departments.

The revised definitions are as follows:

South East

Bedfordshire, Hertfordshire, Essex, Berkshire, Buckinghamshire, Oxfordshire, London (Greater London Council area), Kent, Surrey, Sussex, Hampshire, (including the Isle of Wight and the borough of Poole).

East Anglia

Cambridgeshire, Huntingdonshire, the Soke of Peterborough, Norfolk and Suffolk.

South Western

Cornwall (including the Isles of Scilly), Devonshire, Dorset (excluding the borough of Poole) Gloucestershire, Somerset and Wiltshire.

West Midlands

Herefordshire, Shropshire, Staffordshire, Warwickshire and Worcestershire.

East Midlands

Derbyshire (except the High Peak District, which is included in the North Western Region) Leicestershire, Parts of Holland and Parts of Kesteven and the City of Lincoln in Lincolnshire, Northamptonshire, Nottinghamshire and Rutland.

Yorkshire and Humberside

The East Riding and West Riding of Yorkshire, the City of York, and Parts of Lindsey in Lincolnshire.

North Western

Cheshire, Lancashire and the High Peak District of Derbyshire (i.e. the boroughs of Buxton and Glossop, the urban districts of New Mills and Whaley Bridge and the rural district of Chapel-en-le-Frith).

Northern

Cumberland, Durham, Northumberland, Westmorland, and the North Riding of Yorkshire.

Scotland

The whole of Scotland.

Wales

The whole of Wales and Monmouthshire.

ANNEX D

TABLE 1

Distribution of First Year Students and Whether at Medical School of First Choice

Medical School	*Whether at medical school of first choice*				*No First Choice*		*Total No. of Students*
	YES	%	*NO*	%	No.	%	
Edinburgh	131	88·5	17	11·5	0	—	148
Aberdeen	74	75·5	24	24·5	0	—	98
Glasgow	149	83·2	30	16·8	0	—	179
St. Andrew's	62	69·7	27	30·3	0	—	89
TOTAL SCOTLAND	416	80·9	98	19·1	0	—	514
Oxford	86	93·5	6	6·5	0	—	92
Cambridge	175	95·6	8	4·4	0	—	183
OXFORD & CAMBRIDGE	261	94·9	14	5·1	0	—	275
Charing Cross	29	70·7	10	24·4	2	4·9	41
Guy's	75	86·2	12	13·8	0	—	87
London Hospital	62	84·9	11	15·1	0	—	73
Middlesex	69	89·6	8	10·4	0	—	77
Royal Free	39	45·9	46	54·1	0	—	85
St. Bartholomew's	96	91·4	9	8·6	0	—	105
St. Mary's	44	72·1	15	24·6	2	3·3	61
St. Thomas's	37	90·2	4	9·8	0	—	41
King's College	85	76·6	26	23·4	0	—	111
University College	64	76·2	19	22·6	1	1·2	84
TOTAL LONDON	600	78·4	160	20·9	5	0·7	765
Bristol	64	72·7	24	27·3	0	—	88
Birmingham	92	78·6	25	21·4	0	—	117
Leeds	29	39·7	44	60·3	0	—	73
Sheffield	18	24·0	57	76·0	0	—	75
Liverpool	63	57·3	47	42·7	0	—	110
Manchester	59	59·6	40	40·4	0	—	99
Newcastle	45	52·9	40	47·1	0	—	85
Wales	45	68·2	21	31·8	0	—	66
TOTAL PROVINCES	415	58·2	298	41·8	0	—	713
GRAND TOTAL	1,692	74·6	570	25·1	5	0·2	2,267

TABLE 2

Distribution of Students According to Medical School and Time Spent Travelling Each Day

Medical School	*First Year Students*				*Final Year Students*			
	Up to 1 hour	*1–2 hours*	*Over 2 hrs.*	*Mean hours*	*Up to 1 hour*	*1–2 hours*	*Over 2 hrs.*	*Mean hours*
Edinburgh	155	6	1	0·55	120	7		0·56
Aberdeen	99	8	—	0·57	59	17		0·72
Glasgow	115	64	14	0·98	88	38	5	0·87
St. Andrews	86	5	—	0·55	62	7	2	0·65
TOTAL SCOTLAND	455	83	15	0·70	329	69	7	0·71
Oxford and Cambridge	285	4	3	0·53	22*	1*		0·54*
Charing Cross	30	16	1	0·88	17	22	1	1·10
Guy's	53	33	8	1·02	59	13		0·68
London Hospital	32	36	5	1·13	54	3		0·55
Middlesex	38	35	8	1·13	70	23	2	0·78
Royal Free	54	34	4	0·96	35	34	9	0·17
St. Bartholomew's	53	40	11	1·10	66	16	2	0·74
St. Mary's	46	16	8	0·96	57	5	1	0·61
St. Thomas's	22	19	2	1·03	60	9	2	0·68
Kings College	61	45	7	1·02	39	2		0·55
St. George's					20	14		0·91
Westminster					37		3	0·65
University College	60	22	5	0·87	54	10	3	0·74
TOTAL LONDON	449	296	59	1·01	568	151	23	0·77
Bristol	69	24	—	0·76	53	4		0·57
Birmingham	96	22	3	0·73	56	38	2	0·94
Leeds	72	3	4	0·64	49	1	1	0·56
Sheffield	76	3	1	0·56	65	8		0·61
Liverpool	83	23	4	0·78	71	33	6	0·91
Manchester	74	26	5	0·84	61	12	3	0·74
Newcastle	77	16	—	0·67	62	10	3	0·71
Wales	58	9	—	0·63	64	5		0·57
TOTAL PROVINCES	605	126	17	0·71	481	111	15	0·73
GRAND TOTAL	1,794	509	94	0·79	1,400	332	45	0·74

* Oxford only.

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